

Manufacturers Record

Industry Construction

\$6.50 per Year.
Single Copy, 20 Cents.

Baltimore, Md.
MAY 29, 1930



This Great Land of Ours.

Very soon there will be graduated from our institutions and colleges thousands of young men and women who have completed their courses and will enter upon their life work. They face the world with a different prospect before them from that which confronted their parents and their grandparents.

The opinion is held in some quarters that America has exceeded the bounds of reason in education, and that the professions are being crowded by men who would make better mechanics, while the field of workers and artificers is not getting the services of an adequate number of recruits, nor recruits of the right calibre. Be that as it may, the fact remains that one of the brightest hopes before America rests in what will be the accomplishment of these educated men and women, who, in their search and research in various fields of endeavor, are, from one standpoint or another, working for the betterment of the race.

Trained minds bent upon new discoveries and new creations to benefit mankind. What a prospect! And similar thousands are crowding the entrance doors, to begin their work with the new academic year. Before they in turn shall graduate what changes will come about!

In this rapidly moving age changes come quickly. The airplane will probably be used many times as much as it is today. It will be used not only by the population generally, but for the transportation of freight from coast to coast. Plans are already being laid in that direction. And new cities will have been planned to meet modern travel conditions and old cities, for all their improvements, will be thinking in terms of wider boulevards, set-back buildings and greater safety for the lives of their inhabitants. Perhaps we will see the people to whom we talk over the telephone, and talking without wires to carry the message may at that time be a fully realized accomplishment.

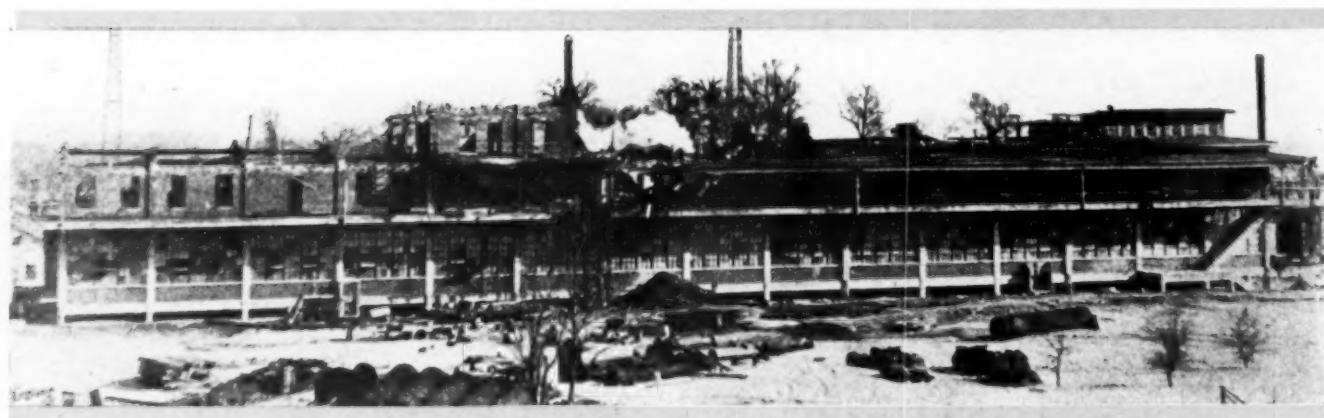
With a national wealth that is rapidly approaching the inconceivable mark of five hundred billion dollars, with a spirit of virility and optimism that has never been equalled on the face of the earth—what a prospect America faces. And the cry for men is greater today than ever, for men who can do things, men who can be trusted to carry forward the work, the plans of which we have seen only the beginning.

In view of all this, shall we be downhearted in a moment of business depression? If we are, it would seem that we are hardly grateful for the blessings we enjoy.

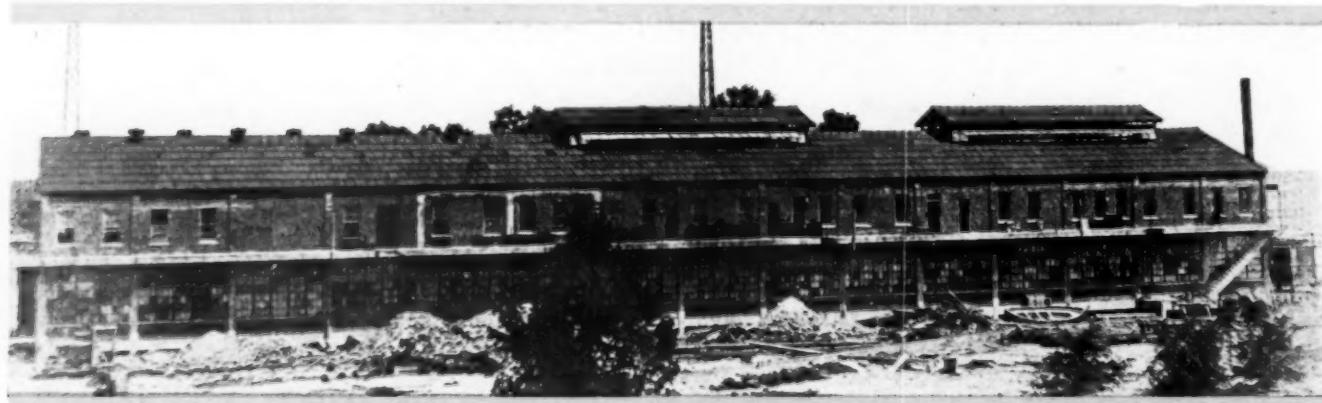




FIRE DECIDED *which* ROOF WAS BEST---- *but at what cost!*



When roofing estimates were submitted for this warehouse erected in Memphis, Tenn., in 1921, Cementile was eliminated in favor of a wood deck roof for apparent economical reasons. Five years later fire destroyed the wood roof. Now, fireproof Cementile protects this warehouse.



Here is an old story—realization *after a fire* of the value of fire-protection. All that loss of time and money could have been prevented at the very beginning by installing a Cementile roof. For this roof insures fire-protection.

No flames, however fierce—no moisture—no natural destructive force of any

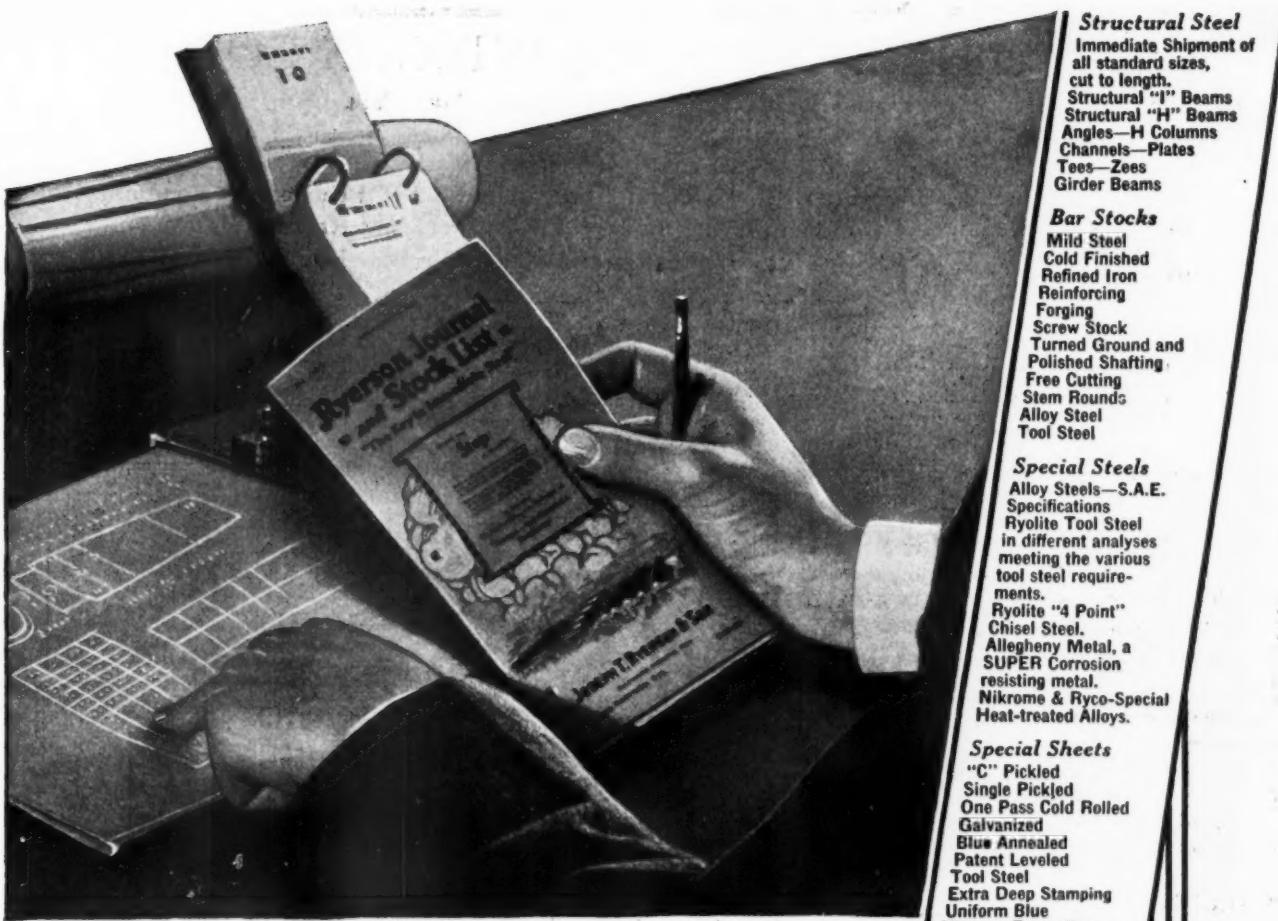
kind can harm this roofing tile of steel-reinforced concrete. And the initial cost is the only price you pay for permanent Cementile protection.

Send for our illustrated roofing book which gives you new and interesting facts about this low cost, fire-proof roofing, and its many advantages.

AMERICAN CEMENT TILE MANUFACTURING COMPANY
804 OLIVER BUILDING PITTSBURGH, PA.

Plants: WAMPUM, PA. LINCOLN, N. J. BIRMINGHAM, ALA.
Offices: PITTSBURGH NEW YORK PHILADELPHIA ATLANTA BIRMINGHAM

CEMENTILE



This Book has Solved Many Steel Problems

It is the national guide used by thousands of manufacturers and builders throughout the country. It gives sizes, weights, prices, and more important, complete lists of steel actually in stock ready for current use.

It is the Ryerson Journal and Stock List—Key to immediate steel—more than 175,000 tons carried in stock at the nine Ryerson Steel-Service Plants. Separate editions give the local stocks at every plant, and each is cross referenced with the other to facilitate national buying. We will be glad to send you all of the editions in which you are interested. Address the nearest plant.

JOSEPH T. RYERSON & SON INC.

Plants: Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City

Representation in: Minneapolis, Rockford, Kansas City, Tulsa, Houston, Newark, New York, Denver, Los Angeles, San Francisco, Dallas

RYERSON

Structural Steel
Immediate Shipment of all standard sizes, cut to length.
Structural "I" Beams
Structural "H" Beams
Angles—H Columns
Channels—Plates
Tees—Zees
Girder Beams

Bar Stocks
Mild Steel
Cold Finished
Refined Iron
Reinforcing
Forging
Screw Stock
Turned Ground and Polished Shafting
Free Cutting
Stem Rounds
Alloy Steel
Tool Steel

Special Steels
Alloy Steels—S.A.E.
Specifications
Ryolite Tool Steel in different analyses meeting the various tool steel requirements.
Ryolite "4 Point"
Chisel Steel
Allegheny Metal, a SUPER Corrosion resisting metal.
Nikrome & Ryco-Special Heat-treated Alloys.

Special Sheets
"C" Pickled
Single Pickled
One Pass Cold Rolled
Galvanized
Blue Annealed
Patent Leveled
Tool Steel
Extra Deep Stamping
Uniform Blue
Vitreous Enameling
Wellsville Polished
Partition
Bill Poster
Armco Iron
Terre Plate
Allegheny
Electrical

Building Products
Reinforcing Steel and Accessories.
Metal Lath
Expanded Metal
Wire Mesh
Spirals
Steel Joist
Plastering Channels
Corner Bead
Base Screed
Picture Mold

Other Special Lines
Strip Steel
Bolts and Nuts
Welding Rods
Floor Plates
Boiler Tubes and Fittings
Steel Grating
Stair Treads
Tag Protectors
Turnbuckles
Wire—Rivets
Glyco Babbitt—Five grades meet all the varying needs of industry
Solder

Machinery
Machine tools and metal-working equipment of all kinds including
Lathes—Drills
Shapers—Grinders
Punches & Shears
Milling Machines
Friction Saws
Horizontal Boring
Drilling and Milling Machines
Welding Equip.
Bending Rolls
Small Tools, Etc.



STEEL SERVICE



ESTABLISHED 1868

THE BABCOCK & WILCOX COMPANY

85 LIBERTY STREET, NEW YORK

Manufacturers of

Water-Tube Boilers, Steam Superheaters, Air Preheaters, Economizers,
Chain Grate Stokers, Oil Burners and Refractories.
Pressure Vessels and Special Process Equipment.

BRANCH OFFICES

ATLANTA, Candler Building
BOSTON, 80 Federal Street
CHICAGO, 20 North Wacker Drive
CINCINNATI, Traction Building
CLEVELAND, Guardian Building
DALLAS, TEXAS, Magnolia Building
DENVER, 444 Seventeenth Street

DETROIT, Ford Building
HOUSTON, TEXAS, Electric Building
LOS ANGELES, Central Building
NEW ORLEANS, 344 Camp Street
PHILADELPHIA, Packard Building
PHOENIX, ARIZ., Heard Building
PITTSBURGH, Koppers Building

PORTLAND, ORE., Failing Building
SALT LAKE CITY, Kearns Building
SAN FRANCISCO, Sheldon Building
SEATTLE, Smith Tower
HONOLULU, T. H., Castle & Cooke
Building
HAVANA, CUBA, Calle de Aguiar 104
SAN JUAN, PORTO RICO, Recinto Sur 51

CHARLESTON DRY DOCK & MACHINE CO.

Successors to VALK & MURDOCH CO.

MARINE AND STATIONARY BOILERS Repairs to Steel and Wooden Vessels

8,000-ton Dry Deck—1,500 and 600-ton Marine Railways
CHARLESTON, S. C.

WATER FILTERS

Pressure and Gravity type for Municipal Water Supplies.
Rayon Manufacturing Plants, Textile Finishing Establishments, Raw Water Ice Plants, Laundries, Etc.

ROBERTS FILTER MANUFACTURING COMPANY
604 Columbia Avenue

Darby, Pennsylvania

TAYLOR MADE FIREBRICK

HIGHEST QUALITY—KENTUCKY FIRECLAYS
UNEXCELLED FOR POWER PLANTS AND STEEL FURNACES
Also Sillimanite and Diaspor Refractories

THE CHAS. TAYLOR SONS CO., Cincinnati, Ohio
Manufacturers of Refractories for 63 years.
PLANTS AT CINCINNATI AND TAYLOR, KENTUCKY

High Temperature Cements

FIREBOND THERMOLITH

REFRACTORIES
Fireclay High-Alumina Silica Chrome Magnesite

Acid-Proof Brick
HARBISON-WALKER REFRactories CO.
World's Largest Producer of Refractories
Pittsburgh, Pa.

INDUSTRIAL PIPING

Power Piping Co., Pittsburgh, Pa.

POWER
Piping
FOR EVERY INDUSTRIAL NEED

Pittsburgh Piping MANUFACTURERS AND CONTRACTORS



WE ARE fully equipped to supply
fabricated materials and to install
complete piping systems for Electric
Power Stations, Blast Furnaces, Steel
Mills, Coke Works, and Industrial
Plants of every description—backed
by an experience of more than a
quarter century.

PITTSBURGH PIPING & EQUIPMENT CO.

43rd St. and A. V. R. R., Pittsburgh, Pa.

New York Chicago San Francisco Cleveland
220 Broadway Peoples Gas Bldg. Call Bldg. Ulmer Bldg.
Houghton, Mich. Indianapolis Detroit
Dee Bldg. Occidental Bldg. General Motors Bldg.

EXCELSIOR

All Standard and
Special Shapes

FIRE ALABAMA CLAY PRODUCTS CO. FIRE BRICK

FIRE CLAY, SEWER PIPE, FLUE LINERS and WALL COPING

Write for Catalogue and Discounts

Owensboro Sewer Pipe Co. Owensboro, Ky.

BRICK CHIMNEYS CONCRETE BOILER BRICKWORK The Rust Engineering Co.

Engineers and Contractors
BIRMINGHAM, ALA.
PITTSBURGH—WASHINGTON—NEW YORK—CHICAGO

Vogt PRODUCTS

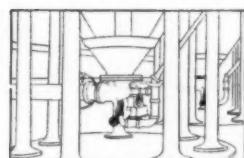
REFRIGERATING AND ICE
MAKING MACHINERY—
WATER TUBE & HORIZONTAL
RETURN TUBULAR BOILERS
DROP FORGED STEEL VALVES
& FITTINGS—OIL REFINERY
EQUIPMENT—Ask for Bulletins

HENRY VOGT MACHINE CO., Manufacturers, Louisville, Ky.

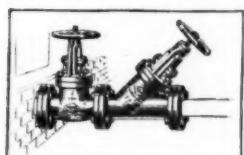


Fig. 296 Jenkins Standard Iron Body "Y" Valve and sectional view of valve showing refinements of design.

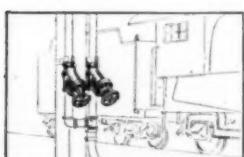
An ideal Jenkins for processing apparatus handling heavy liquids



Jenkins "Y" Valves are used in digester discharge service and paper and pulp mills.



...in boiler blow-off service, providing free passage for scale and sediment.



...in locomotive boiler wash out systems.

Control of heavy, viscous liquids in numerous manufacturing processes creates valve requirements that are ideally met with Jenkins "Y" Valves.

These valves are standard on apparatus used in sugar refining, paper making, in candy and food plants, in other processes where the liquors are heavy or contain solid matter. The "Y" Valve, as may be seen in the sectional view, provides practically a straight-line flow when open. In addition to this feature, both the resilient disc and the seat ring are renewable, while the hand wheel, because of the valve's design, is easily accessible in close quarters.

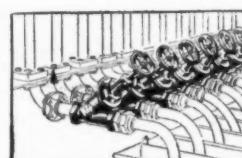
Many prominent apparatus manufacturers find Jenkins "Y" Valves the practical choice for processing equipment. Whatever the valve problem Jenkins Engineering Advisory Service, comprising a group of experienced valve engineers, is ready to aid manufacturers. Consultation involves no obligation.

JENKINS BROS.

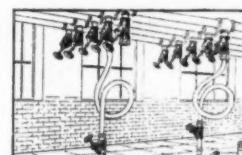
80 White Street, New York, N.Y.
524 Atlantic Avenue, Boston, Mass.

JENKINS BROS., Limited, Montreal, Canada; London, England
Factories, Bridgeport, Conn., Elizabeth, N.J.; Montreal, Canada

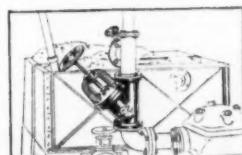
133 No. Seventh Street, Philadelphia, Pa.
646 Washington Boulevard, Chicago, Ill.



Jenkins "Y" Valves permit easy passage for the heavy liquors in sugar refining.



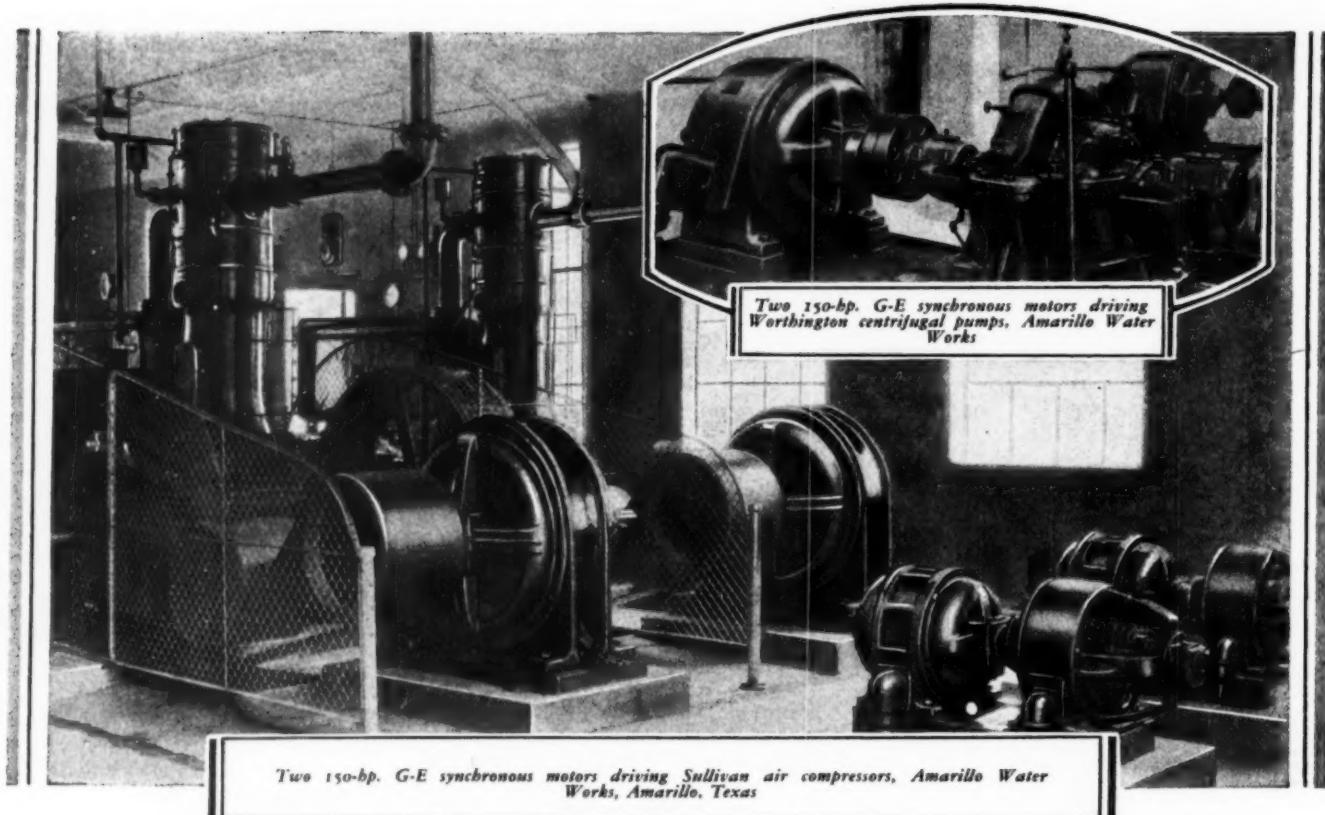
...in filter lines.



...on chemical and process equipment that handle thick, heavy fluids.

Jenkins VALVES

Since 1864



Two 150-hp. G-E synchronous motors driving Sullivan air compressors, Amarillo Water Works, Amarillo, Texas

G-E Motors that help Amarillo keep pace

It is significant that Amarillo, a city where civic progress is outstanding, specified G-E Motorized Power for its new municipal pumping station. Every factor—every type of pump drive—was carefully considered before a selection was made. Local conditions dictated the air-lift pumping method—common sense, the economy and reliability of

electric drive—sound engineering and civic pride, the specifying of G-E equipment.

Regardless of the pumping methods employed, G-E engineers are ready to advise you on the motor drive. Investigate through your nearest G-E office the proved economies of G-E Motorized Power as applied to municipal water systems.



Motorized Power
-fitted to every need

200-351

JOIN US IN THE GENERAL ELECTRIC HOUR, BROADCAST EVERY SATURDAY EVENING ON A NATION-WIDE N.B.C. NETWORK

GENERAL ELECTRIC

SALES AND ENGINEERING SERVICE IN PRINCIPAL CITIES

GEARS BY EARLE

...and

~~17~~
~~21~~

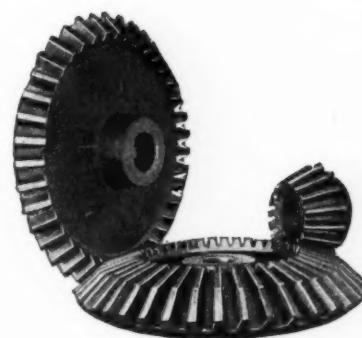
26,000,000
jars of Vicks

Not very much resemblance admittedly. And yet we take some pride in the fact that the makers of this famous cold remedy choose Earle Gears to drive their processing equipment.

Earle Gears are produced economically in a specialized plant. There are over 40,000 patterns in stock. Your gears are cut quickly and with great accuracy on modern automatic equipment.

Earle Gears are generated in all types (spur, bevel, worm, etc.) of any practical gear material.

You will get full value for your money when you specify Earle Gears as standard, with quickest delivery.



THE EARLE GEAR & MACHINE CO.

4719 Stenton Ave., Philadelphia, Pa.

95 Liberty St., New York 110 State St., Boston, Mass.
117 King St., Melbourne, Australia 26 Charles St., London, Eng.
c/o Andrews & George Co., No. 5 Shiba Park, Tokyo, Japan

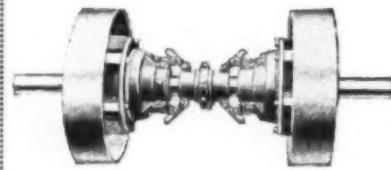
Goldens' Foundry & Machine Co.
COLUMBUS, GEORGIA

MANUFACTURERS OF
**MACHINE MOULDED PULLEYS
HANGERS SHAFTING**

Couplings, Pillow Blocks, Floor Stands, Collars, etc.

Send for Price List and Discount Sheet

SCHULTZ
Friction Clutches



This clutch is for use on counter-shafts, hoisting drums or other mechanisms requiring both forward and reverse motion.

A. L. Schultz & Son

1675 Elston Ave.,

CHICAGO, ILL.

**SUPER-TENSION
CABLES**

Until the development of the impregnated paper insulated cable for power plant transmission at high pressures, it was necessary to reduce the voltage in congested districts. OKONITE-Callender super-tension cables now permit transmission of power underground, under water or through aerial power cables at voltages up to 132,000 v.

Ask for complete information.

THE OKONITE COMPANY

Founded 1878

THE OKONITE-CALLENDER CABLE COMPANY, INC.

Factories: Passaic, N. J.
Paterson, N. J.

SALES OFFICES:

NEW YORK CHICAGO PITTSBURGH ST. LOUIS
BOSTON ATLANTA SAN FRANCISCO
BIRMINGHAM LOS ANGELES SEATTLE DALLAS

P&H
Traveling
Cranes and Hoists

Harnischfeger
Corporation
Established 1884
Crane and Hoist Division
3827 National Ave.
Milwaukee, Wis.

CONTINENTAL GIN COMPANY
announces many new improvements in Cotton
Ginning Machinery and Heavy Duty
Oil Engines.

Write for Details

Address: 4600 4th Ave. So., Birmingham, Ala.

QUALITY PIG IRON
PLUS

Intelligent Cupola Service

SLOSS-SHEFFIELD STEEL & IRON CO.
BIRMINGHAM, ALA.

DEEMER STEEL CASTING CO.
DEPENDABLE CASTINGS
Shipped PROMPTLY
CARBON MANGANESE ALLOY
PATTERN and MACHINE WORK
DEEMER STEEL CASTING CO.
NEW CASTLE, DELAWARE

ELECTRIC STEEL CASTINGS

Weighing from 1 lb. to 500 lbs. each

Quantity Production A Specialty

Nickel, Chrome and Other Alloy

Quick Delivery

Inquiries Solicited

CRUCIBLE STEEL CASTING COMPANY

LANSDOWNE, DELAWARE COUNTY, PA.

**COMPLETE
FOUNDRY SERVICE**

The MOCCASIN BUSHING COMPANY, manufacturers of MOCCASIN OIL DISTRIBUTING BUSHINGS, is prepared to supply engine brasses, brass or bronze castings of all descriptions and MOCCASIN solid or cored bronze bars at reasonable prices.

Send your specifications to the MOCCASIN BUSHING COMPANY, 2000 Chestnut Street, Chattanooga, Tennessee. Your order will receive our prompt attention.

**RICHMOND
STRUCTURAL STEEL CO.**
ORNAMENTAL IRON—GREY IRON CASTINGS
RICHMOND, VA. **BRANCH**
NORFOLK, VA.

**DRIVING
OF THE
HIGHWAY!**

International Trucks include the $\frac{3}{4}$ -ton Special Delivery; the 1-ton Six-Speed Special; Speed Trucks, $1\frac{1}{4}$, $1\frac{1}{2}$, and 2-ton; and Heavy-Duty Trucks to 5-ton. Company-owned branches at 176 points and dealers everywhere have the line on their display floors for convenient inspection. Catalogs on request.

IN this great automotive age the success of International Trucks stands like a beacon on the horizon. Coming into prominence like a thoroughbred destined for victory, International Harvester has scored a triumph in truck engineering and in popular approval throughout the world. The basic reason is twofold: International trucks are soundly built on 25 years' experience in automotive manufacture—and International performance is safeguarded by a Company-owned truck service organization without a peer in the industry.

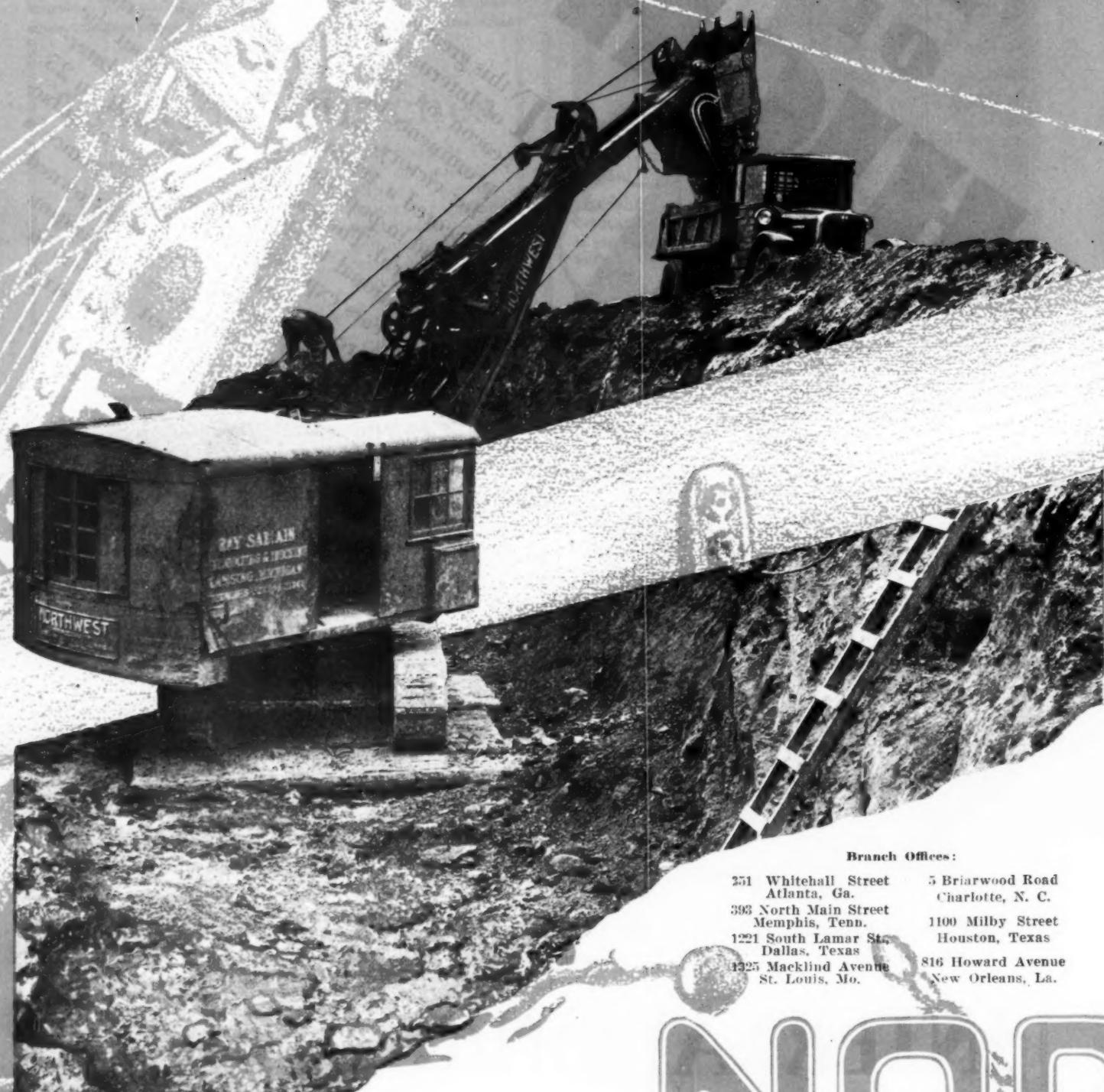
INTERNATIONAL HARVESTER COMPANY
606 S. Michigan Ave. **OF AMERICA**
(Incorporated) Chicago, Illinois



A Heavy-Duty International in the highway freight service of the St. Louis Southwestern Railroad.

INTERNATIONAL TRUCKS

Basement *reach*



Branch Offices:

251 Whitehall Street
Atlanta, Ga.

393 North Main Street
Memphis, Tenn.

1221 South Lamar St.
Dallas, Texas

1325 Macklind Avenue
St. Louis, Mo.

5 Briarwood Road
Charlotte, N. C.

1100 Milby Street
Houston, Texas

816 Howard Avenue
New Orleans, La.

NOR

Excavators! that truck with a Northwest!

The Northwest offers you features found in no other shovel—features particularly advantageous to your class of work!

Dig without any division of engine power between hoist and crowd!

Crowd out beyond the boom without having the hoist pull against the crowd!

Travel in the narrow limits and mud of the hole with positive traction on both crawlers *even while turning!*

Steer without swinging the cab and without the aid of a ground man!

Change the angle of the boom without adjusting chains!

— and secure all the other famous Northwest features. Write today for complete 100-page catalog.

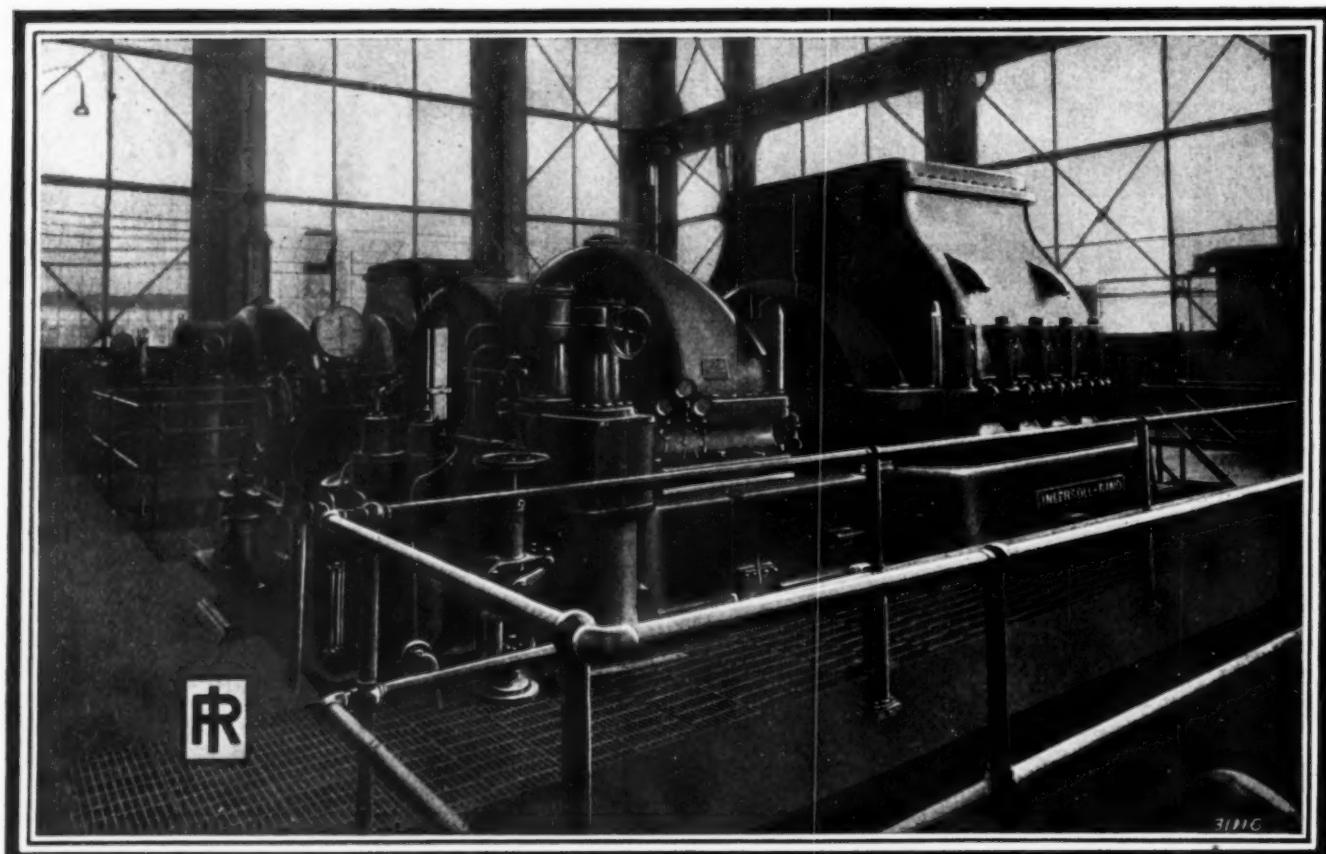
NORTHWEST ENGINEERING CO.

**The world's largest exclusive builders of gasoline, oil burning
and electric powered shovels, cranes and draglines**

1733 Steger Building 28 East Jackson Blvd.
Chicago, Illinois, U. S. A.

MR 5-29 Gray





Another Modern Steel Mill Installs I-R Turbo-Blowers

The two Ingersoll-Rand blast furnace turbo-blowers shown above are installed in the new power house of the Gulf States Steel Company at Alabama City, Ala.

Each of these blowers is designed for a maximum capacity of 60,000 cu. ft. per minute against a discharge pressure of 30 pounds. They are equipped with venturi-tube governors to maintain constant volume. The governors are corrected for variations in temperature and barometric pressure. A conveniently located manometer scale enables the operator to correct for these two factors.

The turbines that drive the blowers are designed to operate with 385 pounds steam pressure, 250 degrees superheat, and 29 inches of vacuum. Inter-stage bleeding is provided at three points in the casings. Turbine oil is cooled by condensate.

Ingersoll-Rand Turbo-Blowers are designed and built to conform to the best steel mill practice. They are conservatively rated, providing ample reserve power for emergencies.

I-R Turbo-Blowers are serving more than 50 blast furnaces in the United States.

INGERSOLL-RAND COMPANY - 11 Broadway - New York City

Branches or distributors in principal cities the world over
For Canada Refer—Canadian Ingersoll-Rand Co., Limited, 10 Phillips Square, Montreal, Quebec

Ingersoll-Rand

62-T



Courtesy of Hemp and Company, Saint Louis

Ask HEMP about Steel Sheets

NO one could stroll thru the huge factory and warehouses of Hemp & Company without being impressed by the variety of this company's output.

Bake ovens, stoves, stove pipe, lockers, vegetable bins, cabinets and dozens of other sheet steel products catch the eye.

Drawing, forming, punching, spinning—almost all the better known

sheet metal operations are employed. Here is a wealth of practical daily experience that should provide a sound basis for judging the merits of steel.

Hence, Hemp & Company's purchases of Granite City locker stock, blued and black sheets are convincing evidence of the highly satisfactory service, workability and quality supplied under the Granite City Steel trade-mark.

Chicago • Dallas
Kansas City
Los Angeles
Memphis

SINCE

GRANITE CITY SHEETS

1878

St. Louis • St. Paul
Seattle
San Francisco
Salt Lake City

GRANITE CITY STEEL CO. **GRANITE CITY ILLINOIS**
Galvanized, Blue Annealed and Black Sheets - Plates and Tin Plate

McClintic-Marshall Company

Steel Bridges and Buildings

Tanks, Barges, Pipe, Transmission Towers
and Plate Work

General Offices:- PITTSBURGH, PA.

OFFICES IN PRINCIPAL CITIES

PIG IRON
SEMITIENISHED
STEEL
BARS & SHAPES



SKELP
SHEETS
PIPE
SPECIALTIES

**REPUBLIC
STEEL CORPORATION**

YOUNGSTOWN, OHIO

**CONVERSE BRIDGE & STEEL CO.
STRUCTURAL STEEL**

For
Industrial Buildings, Mines, Refineries,
and the Building Trade

CHATTANOOGA

TENNESSEE

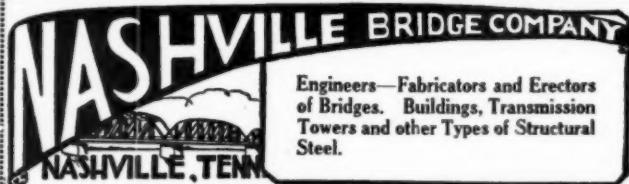


PATTERSON BLOCKS

Builders of dependable tackle blocks since 1858.
There is one to suit each of your needs.

Write for Catalog No. 22

W. W. PATTERSON CO.
57 Water St., Pittsburgh, Pa.



Engineers—Fabricators and Erectors
of Bridges. Buildings, Transmission
Towers and other Types of Structural
Steel.

DIETRICH BROTHERS

Structural and Ornamental Iron and Steel Works
Large Stock of Standard and Bethlehem Shapes

CONCRETE REINFORCEMENTS
BALTIMORE, MD.

ATLANTIC BRIDGE COMPANY

ENGINEERS · CONTRACTORS · ERECTORS
BRIDGES · FOUNDATIONS · BUILDINGS
GREENSBORO, NORTH CAROLINA

From One Source

You can secure your entire steel requirements
from Bethlehem — with the assurance that each
item is as good and dependable as the facilities
of a completely equipped organization with years
of experience can make it.

BETHLEHEM STEEL COMPANY

General Offices: Bethlehem, Pa.

District Offices: New York, Boston, Philadelphia, Baltimore, Washington,
Atlanta, Pittsburgh, Buffalo, Cleveland, Cincinnati, Detroit, Chicago,
St. Louis.

Pacific Coast Distributor: Pacific Coast Steel Corporation, San Francisco,
Los Angeles, Portland, Seattle, Honolulu.

BETHLEHEM

CHAMPION BRIDGE COMPANY

WILMINGTON, OHIO
Manufacturers of
Bridges and Structural Work
Southern Offices:
ATLANTA, GA. FORT LAUDERDALE, FLA.

THE PHOENIX IRON CO.

MANUFACTURERS OF OPEN HEARTH
Structural Steel Shapes, Beams,
Channels, Angles, and Ship Shapes

Works: Phoenixville, Pa. Main Offices: Philadelphia, Pa.

OFFICES:
22 S. 15th St., Philadelphia 30 Church St., New York
Munsey Building, Washington 110 State St., Boston
City Savings Bk. Bldg., Albany, N. Y. 26 Victoria St., London

THE PHOENIX BRIDGE CO.

Engineers, Fabricators, and Erectors
Bridges and Other Structures of Steel

CAPACITY 60,000 TONS

Works and Engineering Office: Phoenixville, Pa.





Another Connors Job!

TITLE & TRUST COMPANY OF FLORIDA
Jacksonville, Florida

Marsh & Saxony, Jacksonville, Architects
N. W. Green, Jacksonville, Engineer
A. Bentley & Sons, Jacksonville, Contractors

Dignity and simplicity are emphasized in the architectural lines of this impressive bank building. Both service and quality were the deciding factors in the selection of Connors Reinforcing Bars used in its construction.

Our strategically located plant is fitted for speedy service to all the Southeast.

CONNORS STEEL CO.
Birmingham, Alabama

**CONNORS REINFORCING
BARS.**



An Air Castle With Reason

THE Sterick Building at Memphis, Tennessee, is up in the air, 29 stories above the sidewalk, but you think no more of doing business on the twenty-eighth floor than the second. Steel is the reason.

We furnished and erected the entire steelwork.

VIRGINIA BRIDGE & IRON CO.
Roanoke Birmingham Memphis Atlanta New Orleans
New York Los Angeles Charlotte Dallas El Paso



**VIRGINIA BRIDGE
STEEL STRUCTURES**

Roebling Welding Wire

John A. Roebling's Sons Company
Trenton, New Jersey.



Snead Architectural Iron Works
STRUCTURAL STEEL
ORNAMENTAL IRON
LOUISVILLE, KY.



BELMONT IRON WORKS
NEW YORK
EDDYSTON, N. C.
Southern Sales Office, Charlotte, N. C.
Engineers Contractors Exporters
Structural Steel
Complete Industrial Buildings

ROANOKE IRON & BRIDGE WORKS, Inc.
Structural and Ornamental Iron
Wrought Steel Fences
Gray Iron Castings
FROM 1 TO 10,000 LBS.

Write for Estimates

ROANOKE, VA.

CAROLINA STEEL & IRON COMPANY
GREENSBORO, N. C.
Sales Office:—709 Nissen Bldg., WINSTON-SALEM, N. C.
Structural Steel FOR Buildings and Bridges
Capacity 1000 Tons per Month. 3000 Tons in Stock
The Largest Steel Fabricators in the Carolinas



Structural Steel

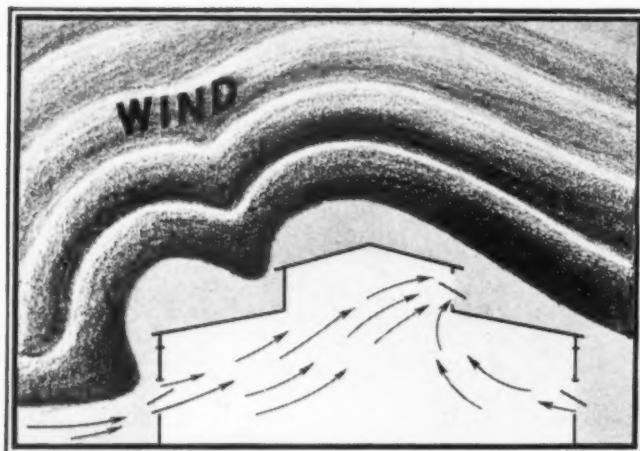
Buyers of structural steel save money by specifying Ingalls. Location, huge production, and careful workmanship, give us the advantage.

ASK FOR QUOTATION
on bridges, Ingalls Truss (for fireproof floors and roofs), standard buildings, etc.

THE INGALLS IRON WORKS CO.

Plants and Executive Offices BIRMINGHAM, ALA., VERONA, PA. (In the Pittsburgh District)

Branch Offices: New York, Atlanta, Tampa, New Orleans.



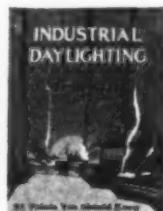
Put the **WIND** to work in your factory

One of the most powerful and economical ventilating forces you can use in your factory is THE WIND.

Plan your manufacturing buildings correctly and the Wind will help you maintain a healthful, invigorating atmosphere without which top-speed production is impossible.

How the Wind may be utilized to push air into and pull air out of any industrial building is one of many discoveries made by Fenestra Research Engineers in their studies of Daylighting and Airation in co-operation with the Department of Engineering Research at the University of Michigan.

Scientific results, in readable, interesting form, thoroughly illustrated, are now offered in the two books shown below. FREE to engineers, architects and designers of industrial buildings.



For over 20 years, Detroit Steel Products Company—oldest and largest maker of steel windows in America—has helped the nation's industries secure greater output through more light, better ventilation and improved working conditions. If you are designing a new industrial building, you are invited to avail yourself of an intensive study of your Daylighting and Airation problems by Fenestra Engineers, without cost or obligation.

Fenestra

Industrial Steel Windows
Holorib Insulated Steel Roof Decks

Detroit Steel Products Co.,
2290 East Grand Blvd., Detroit, Mich.

Without obligation, please send me your Daylighting and Airation booklets.

Name.

Address.

DUFUR, BAGGOTT & CO.

BRASS AND STEEL WIRE WORK OF EVERY DESCRIPTION

Absolute Prompt Delivery

Bank Work Elevator Enclosures Elevator Cabs
Counter Railings Grills Wickets Guards
Partitions Skylight Protectors, Etc.

403 N. PACA STREET

BALTIMORE, MD.

IRON PIPE RAILINGS

When in the market for Pipe Railing for Stairs, Bridges or Retaining Walls, send us your drawings. We can quote you prices that will be worth considering.

PIPE RAILING CONSTRUCTION CO., Long Island City, New York

Manufacturers Of

ELECTRIC AND FREIGHT AND
HAND POWER PASSENGER

ELEVATORS DUMB WAITERS
MILLNER COMPANY

St. Louis, Mo.

THE CUTLER MAIL CHUTE

In its perfected form—the outcome of long experience, designed to meet the requirements of public use under Postoffice Regulation. Simple and substantial in design and construction, durable in finish, with an artistic quality appreciated and much commended by Architects. • • • Details, information on request.

THE CUTLER MAIL CHUTE COMPANY
General Offices and Factory
ROCHESTER, N. Y.

AMERICAN ELEVATORS

PASSENGER AND FREIGHT
AMERICAN

ELEVATOR and MACHINE CO., INC.

Established in 1898

LOUISVILLE, KENTUCKY



SCHOOL DESKS

A. H. Andrews
CHICAGO
107 So. Wabash Avenue

ANGLE STEEL EQUIPMENT

for Factory, Shop and Office

Angle and Sheet Steel, Textile Mill and
General Manufacturing

Stools, Chairs, Desks, Bench Legs,
Tables, Benches, Cabinets, Trucks,
Machine Tenders, Bins, Pans, etc.

Send for Catalog "C-M.R."

Agents and Dealers in all Principal Cities

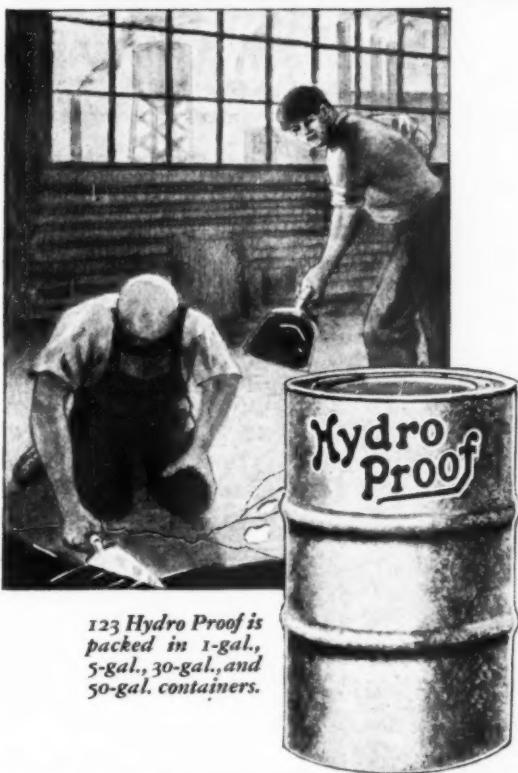
Angle Steel Stool Co.

Plainwell, Mich.



Send for Catalog

FLOOR RESURFACING



123 Hydro Proof is packed in 1-gal., 5-gal., 30-gal., and 50-gal. containers.

Long-Life Floors for Severe Service

EVERY year, broken and rutted floors cause an enormous waste in industry—broken materials, difficult trucking, increased accidents.

It is a simple matter to repair any floor—wood, concrete, brick, or asphalt—with Hydro Proof. Simply lay on a half-inch coating of 123 Hydro Proof Floor Resurfacer, a combination of Hydro Proof, Portland cement, and suitable aggregate.

Once in place, this surface is dustless and resilient, waterproof and spark-proof, resistant to acids, alkalies and process chemicals. It never cracks, never peels, and it lasts for years under the most severe traffic.

ASPHALT PRODUCTS CO.
714 Free Street, Syracuse, New York

Other Products:

| | |
|---------------------------|----------------------------|
| Hydro Proof Waterproofing | Zonophalt Armored Roofing |
| Bitumet | Silver Seal Aluminum Paint |
| F. P. Brushing Plastic | Hydro Proof Plastic |
| Hydro Proof Plaster Bond | |

WITH HYDRO-PROOF

Kerlow Steel Floors
222-238 CEDAR AVE.
NEWARK CITY, N.J.

Non-Slipping

WALTER BATES STEEL
FLOOR GRATING
SUBSTATIONS
TOWERS
POLES
THE SEAL OF
WALTER BATES

WALTER BATES STEEL
CORPORATION
GARY INDIANA.

MILCOR
Skylights

The Torpedo Ventilating Skylight is one of the most popular types. Ventilation is regulated easily and quickly by movable shutter. Special fire-proof feature.

MILCOR NO. 900 SKYLIGHT

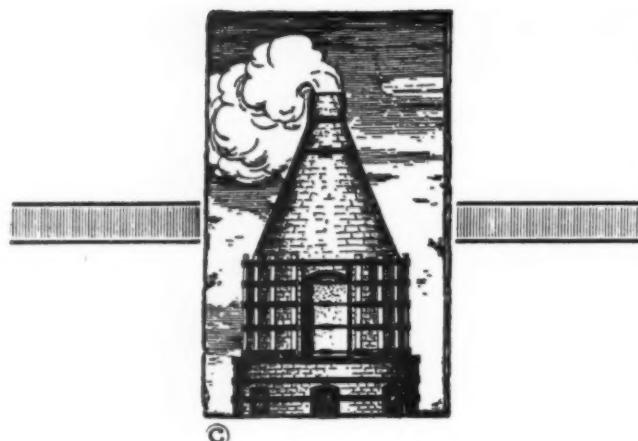
MILCOR NO. 900 HIPPED TORPEDO VENTILATING SKYLIGHT

Skylights and ventilators of every variety are made by Milcor to meet all requirements. The nearest Milcor office will gladly give you full details and quote on your requirements. Send for the Milcor Skylight booklet.

Milwaukee Corrugating Co.
1451 Burnham St., Milwaukee, Wisconsin
Branches: Chicago, Ill., Kansas City, Mo., La Crosse, Wis.

SALES OFFICES:
Boston, Mass.; Detroit, Mich.; Atlanta, Ga.; Little Rock, Ark.; Minneapolis, Minn.; New York, N. Y.; Los Angeles, Cal.

Eastern Plant:
THE ELLER MANUFACTURING CO., Canton, Ohio



Atlanta Terra Cotta Stock Designs

facilitate the use of Terra Cotta on the smaller buildings where a necessity exists for low costs and the shortest deliveries permitted by good manufacturing practices.

Atlanta Terra Cotta Stock Designs are offered in catalog form showing by line drawings and elevations in color, complete and attractive designs which can be adapted to the needs of almost any type of business.

The catalog further offers a wide variety of Inserts, Running Ornaments, Architraves and Mouldings, Name, Date and Decorative Panels, Pilaster Caps and Bases, Cornices and Copings which can be incorporated in your own plans.

Catalog No. 6, a recent and enlarged edition is now available for distribution. A request on your business stationery will bring a copy.

Atlanta Terra Cotta Company

Glenn Building
Atlanta, Georgia
Factory at East Point, Georgia

Southern Factory of
Atlanta Terra Cotta Company
19 West 44th Street
New York

Southwestern Office
A. P. Clark, District Manager
Prætorian Building
Dallas, Texas

LUDLOW GATE VALVES

Their simplicity is a mark of superiority



The internal mechanism of Ludlow Double Gate Valves consists of two gates and two bevelled faced wedges. The wedges are entirely independent of the gates—working between them.

Ludlow Gate Valves work equally well with pressure either side of Gate.

Made of iron and bronze of the highest grade by the most skilled workmen obtainable.

Southern Representatives and Distributors:
Wm. F. Wilcox.....4th National Bank Bldg., Atlanta, Ga.
Robert M. Spurlock.....Shreveport, La.
W. K. Henderson Iron Works & Supply Co., Shreveport, La.
Mid-Continent Supply Co., Fort Worth and Houston, Texas.

The Ludlow Valve Mfg. Co.
TROY, N. Y.

Branch Offices:
Boston New York Chicago Philadelphia Kansas City

THE GEORGIA MARBLE COMPANY

Producers and Manufacturers of
GEORGIA MARBLE

Tate, Georgia
Atlanta Chicago Cleveland Dallas New York

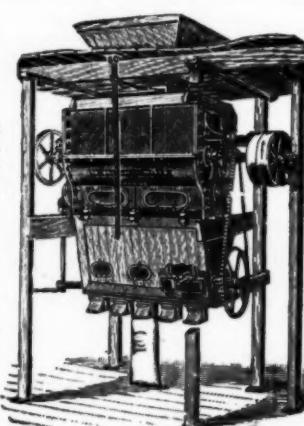
MIXERS

(BROUGHTON PATENTS)

For Wall Plaster, Core Sand, Soap Powder, Composition Flooring and many other kinds of materials requiring mixing.

Ask us to tell you more about them

Dunning & Boschart Press Co.
Incorporated
386 W. Water St. SYRACUSE, N. Y.
ESTABLISHED 1872

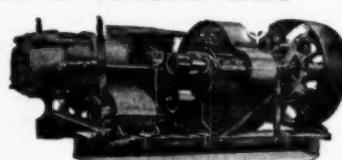


CLAY WORKING MACHINERY

For Brick, Tile and Block, from smallest to largest capacity

Write for catalogue.
Full line equipment.

J. C. STEELE & SONS
Statesville, N. C., U.S.A.





For Summer Production

In hot weather especially, the installation of Halsey Taylor Cooler Fountains pays for itself. They are the last word in cooler construction, with many distinctive and exclusive features found in no other ice cooler.

Practical, Efficient!

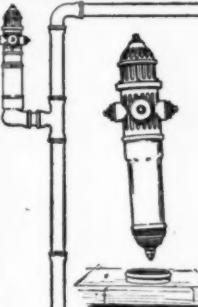
No matter which of many types you choose you get the most satisfactory cooling service possible, not only from the standpoint of efficiency but sanitation, too. Patented automatic stream control, two-stream projector, minimum ice consumption, maximum cooling capacity . . . put Hasley Taylor Coolers to work in your plant, too!

Interested industrial executives may have our complete illustrated manual describing not only coolers but fountains on request.

No. 820, Double-head Cooler

The Halsey W. Taylor Co., Warren, Ohio

HALSEY TAYLOR
COOLER FOUNTAINS



Mathews Fire Hydrant

Because the entire barrel, with all parts, is removable, broken "MATHEWS" hydrants are easily replaced without digging.

**CAST IRON PIPE and FITTINGS
SAND SPUN (Centrifugally Cast)
and PIT CAST
GATE VALVES VALVE BOXES**

R. D. WOOD & CO.
PHILADELPHIA, PENNA.

"The Whole Works" Out in a Jiffy

In business continuously since 1803

LEE CLAY PRODUCTS COMPANY
Manufacturers of
SEWER PIPE - CULVERT PIPE WALL COPING
METER BOXES - FLUE LINING
FIRE BRICK - FIRE CLAY



Grier - Lawrence Construction Company, prominent Mill Constructors of Statesville, North Carolina, writes through their Superintendent, W. W. Abbott, as follows: "It is a pleasure to say of your Pipe, that it is among the best that we have ever used on any job. We used Lee Clay Products throughout on the Chesnee Mill Extension, and are glad to say that we found a minimum of breakage, and a maximum of Quality and Service."

LEE CLAY SHIPS GOOD PIPE

Kentucky Fire Clay produces a close vitreous body that is peculiarly adapted for conducting industrial wastes. Send us a list of your requirements, so that we may quote you delivered prices.

Office and Plant:
CLEARFIELD, Rowan County **KENTUCKY**



UNITE METHOD
Specialists in
CEMENT GUN CONSTRUCTION
Contracts Executed Anywhere
UNITE CONCRETE AND CONSTRUCTION CO.
BARCLAY A. GREENE, President
1301 Woodswether Road, Kansas City, Mo.
Branch Offices: St. Louis, Mo.; Chicago, Ill.; Birmingham, Ala.;
Dallas, Tex.; La Feria, Tex.

THE CAMBRIA CLAY PRODUCTS CO.
MANUFACTURERS
SEWER PIPE - FLUE LINING - WALL COPING
FACE BRICK - FIRE BRICK - FIRE CLAY
HOLLOW BUILDING TILE

Office and Works - **BLACKFORK, OHIO**

Cement-Gun Construction Work
THE RUST ENGINEERING CO.
Engineers and Contractors on all kinds of
Cement-Gun Work

WOODWARD BUILDING, BIRMINGHAM, ALA.
New York Pittsburgh Washington Chicago

CAST IRON PIPE
- AND FITTINGS -
American Cast Iron Pipe Company
Birmingham, Ala.
SALES OFFICES IN PRINCIPAL CITIES

The Traffic Smash-up
Solution in Fire Hydrants
Write today for details

VOGT BROTHERS MFG. CO.
INCORPORATED
LOUISVILLE - KENTUCKY

**One-Fifth
The
Weight of
Cast Iron
Pipe**

AN ABSOLUTELY TIGHT DURABLE PIPE

The lap riveted seam repeats its cycle every twelve inches, forming a broad-stiffening rib of great value, and makes Root pipe one-third stronger than any other type of pipe construction. Light weight and simple connections reduce transportation handling and erection costs. Suitable for conveying water, air, gas, exhaust steam and powdered coal.

ABENDROTH & ROOT MANUFACTURING COMPANY
Pipe Specialists Continuously Since 1867. Sales Office: Woolworth Bldg., N. Y.

**One-Third
The
Weight of
Wrought
Pipe**

ROOT SPIRAL RIVETED PIPE

UNIVERSAL CAST
IRON **PIPE**

THE CENTRAL FOUNDRY COMPANY
Graybar Bldg., 43rd St. and Lexington Ave., New York, N. Y.
Chicago Birmingham Dallas San Francisco

no packing no caking no bell holes

GLAMORGAN
PIPE & FOUNDRY CO.

CAST IRON

GENERAL FOUNDRERS AND MACHINISTS
LYNCHBURG, VA.



A Cast Iron main saves **\$70,000 for the City of PHILADELPHIA**



Fairchild Aerial Surveys, Inc.

THE City of Philadelphia saved \$70,000 by digging up an abandoned 48" cast iron pipe line and relaying it in another location. This pipe line was originally put down in 1888. On examination it was found to be in excellent condition. Consequently the entire line was relaid in a new location where it is expected to serve for 75 or 100 years longer.

Cast Iron Pipe in large and small diameters has been serving the people of Philadelphia and saving them money for more than 100 years. A recent letter from the Chief of the Water Bureau states: "We have cast iron pipe laid in 1822 (8") and 1827 (6"), both of which appear to be in good condition."

The reason why Cast Iron pipe serves for centuries is because of its effective resistance to rust and corrosion. Gas and water mains of ferrous metal (iron and steel) with the exception of *cast iron* disintegrate from rust. Cast Iron pipe is



CAST IRON

The "Q-check" symbol shown above has been adopted as the trade mark of The Cast Iron Pipe Research Association.

CAST IRON PIPE

the only ferrous metal pipe practicable for underground mains which rust will not destroy.

Engineers, contractors and city officials desiring detailed information on the efficiency and economy of Cast Iron pipe for water and gas mains, sewers, road culverts or industrial uses are invited to write to The Cast Iron Pipe Research Association, Thomas F. Wolfe, Research Engineer, 309 People's Gas Building, Chicago, Ill.

Cast iron pipe bearing the "Q-check" trade mark is obtainable from the following leading pipe founders: Alabama Pipe Company, Anniston, Ala.; American Cast Iron Pipe Company, Birmingham, Ala.; James B. Clow & Sons, 219 N. Talman Avenue, Chicago, Ill.; Donaldson Iron Company, Emaus, Pa.; Glamorgan Pipe and Foundry Company, Lynchburg, Va.; Lynchburg Foundry Company, Lynchburg, Va.; National Cast Iron Pipe Company, Birmingham, Ala.; United States Pipe and Foundry Company, Burlington, N.J.; Warren Foundry and Pipe Company, 11 Broadway, New York.



**"What's AFTER those first few years?"
—asks That Tough Old Tester, Time**

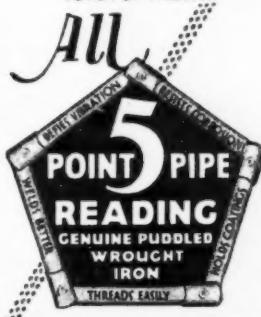
Time, That Tough Old Tester, smiles a grim smile as he lets ordinary pipe run neck-and-neck with Reading 5-Point Pipe when first installed.

Then Time, who always tells the truth, gets down to his age-lasting business of proving how long pipe REALLY lasts. Under his merciless tests, ordinary pipe soon falls by the wayside. But Reading 5-Point Pipe, Time's records show, goes on serving faithfully, year after year—resisting gnawing corrosion, leaky joints, breakage through metal "fatigue". Genuine Puddled Wrought Iron—the material of which this pipe is made—cuts down repairs and replacement throughout the entire life of a building, and endures from two to five times longer than ordinary pipe where conditions are most severe!

That's pipe service. That's genuine pipe saving. That's the big advantage of specifying Reading Genuine Puddled Wrought Iron Pipe—tested in the laboratory of the years.

READING IRON COMPANY, Reading, Pennsylvania

For Your Protection,
This Indented Spiral
Forever Marks



Use only Reading 5-Point Nipples with Reading 5-Point Pipe . . . you'll know them by the indented spiral band.

**GENUINE PUDDLED WROUGHT IRON
READING PIPE**
DIAMETERS RANGING FROM $\frac{1}{8}$ TO 20 INCHES

Science and Invention Have Never Found a Satisfactory Substitute for Genuine Puddled Wrought Iron

Perforated Metal Screens

Perfection, the result of years of experience.

Mundt products embodies a degree of perfection derived from 43 years manufacturing perforated metals. This experience is placed at your disposal, and if you are in the market for perforated metals, you should not place your order until you have consulted with us.

CHARLES MUNDT & SONS

490 Johnston Avenue

JERSEY CITY, N. J.



Perforated Metal Screens for every purpose

also elevator buckets MITCO Products—In-
of all kinds; chutes; interlocked Steel Grating;
hoppers; stacks and Shur-Site Stair Treads;
tanks. Armorgrids.

HENDRICK MANUFACTURING CO.
44 Dundaff St., Carbondale, Pa.
Pittsburgh: Koppers Building

New York: 30 Church St.

Perforated Metals SCREENS OF ALL KINDS

Chicago Perforating Co.
2445 West 24th Place
Tel. Canal 1459 CHICAGO, ILL.



PERFORATED METALS HEADQUARTERS
Cotton Seed Oil Works a Specialty
Send for Samples
ERDLE PERFORATING CO. Rochester, N. Y.

Perforated Metal Screens

Put your
"hole"
problem
up to us.

Nortmann-Duffke Co., 1242 27th Ave., Milwaukee, Wis.

Announcing our new
Large Capacity Recrushers

UNIVERSAL



Designed for rejection work for use with primary
crushers to increase the output of $\frac{3}{4}$ " and finer
materials.

Ideal for use in quarries, gravel pits, and also in large
commercial plants where speedy and accurate control
of the finished product is necessary to meet rigid
specifications as to the per centage of different sizes
allowed.

We manufacture 26 sizes of Crushers and 3 sizes of Pulverizers.
We will assemble any combination outfit either stationary or
portable and with or without power. Write for new catalogue
today.

MANGANESE EQUIPPED
CAPACITIES TO 450 TONS DAILY

UNIVERSAL CRUSHER CO., 627 C Ave. West
Cedar Rapids, Iowa
25 years of unexcelled service

Improved Steel Log and Cylindrical Washers, Combined Scrubbing and Washing Screens

These machines are based on 50 years experience in
building heavy, rugged machines for economically
washing hematite, manganese and gold ores, lime-
stone, sand, gravel, peat, etc.

Write for catalogs and information on Pit,
Mine Quarry and Industrial Equipment,
crushers, ore jigs, screens, dryers, etc.

McLanahan and Stone Machine Company
Hollidaysburg, Pa.

EVERY THURSDAY
is publication day of the
MANUFACTURERS RECORD.

Changes of copy must reach us eight
days in advance, or fifteen days in
advance if proofs are requested.

MANUFACTURERS RECORD
Baltimore, Maryland

CommissionFRED M. VALZ - - CHAIRMAN
PUBLIC SAFETY-FINANCE

ST. ELMO W. ACOSTA • PARKS

THOS. C. IMESON
HIGHWAYS-RADIO-AIRPORTDR. M. B. HERLONG
HEALTH-SANITATIONERNEST E. ANDERS
PUBLIC UTILITIESM. W. BISHOP
SECRETARY**OFFICE OF THE CITY ENGINEER****City Commission of the City of Jacksonville**

JACKSONVILLE, FLORIDA

J. E. PAGE

CITY AUDITOR

G. M. GORDON

PURCHASING AGENT

AUSTIN MILLER

CITY ATTORNEY

GOV HUTCHINSON

CITY SOLICITOR

W. E. SHEDDAN

CITY ENGINEER

HIGHWAY--SEWER--STREET LINES

November 29, 1929.

Manufacturers Record,
Baltimore, Maryland.

Gentlemen:

In reply to yours of the 19th, it is with a great deal of pleasure that I advise you that for many years I have considered the Manufacturers Record as the outstanding magazine of its class in the South and believe that the high standards adhered to in the publication of this magazine has done more good toward the development of the industrial South than any one agency that I know of. We always read this magazine with interest and have used its advertising pages to an advantage in carrying on our work.

Wishing you many years of continued success for the magazine, I am

Yours truly,

W. E. Sheddan

City Engineer.

WES/b

DIRECTORY

ARCHITECTS

CHEMICAL ENGINEERS

ENGINEERS

CHEMISTS

ACCOUNTANTS

GEOLOGISTS

CONTRACTORS

Detailed classification of specialized work undertaken by those having cards in this Directory will be found in Classified Index.

Milburn, Heister & Co.

Architects

WASHINGTON, D. C.

Wm. J. J. Chase, A. I. A.

Architect

Public and Commercial Buildings
140 Peachtree St. ATLANTA, GA.

Geo. Harwell Bond

—A-I-A—

ARCHITECT

Candler Building ATLANTA, GEORGIA

G. Lloyd Preacher & Co., Inc.

Architects and Engineers

1204 Wynne Claugton Bldg.
ATLANTA, GA.

Chas. T. Main, Inc.

Industrial Engineers

Mills, Warehouses, Complete Developments
Electrical, Steam and Water Power
Reports—Appraisals
201 Devonshire St., BOSTON, MASS.

Claude H. Lindsley

Architects

Member American Inst. of Architects
JACKSON, MISS.

E. S. Draper

Landscape Architect and Engineer

Fellow American Society of
Landscape Architects
1516 S. 4th St., CHARLOTTE, N. C.
101 Marietta Bldg., ATLANTA, GA.

Kirby & Company, Inc.

Landscape Engineers

Offering a complete Landscape Service
including
Installation of Dayton Underground
Sprinkler Systems
RALEIGH, N. C.

Wendell P. Miller

and Associates

AIRPORT DRAINAGE SPECIALISTS
Engineers—Contractors
105 W. Monroe St., CHICAGO
85 E. Gay Street, COLUMBUS, O.

B. Russell Shaw Co.

INCORPORATED

Consulting and Designing Engineers
AIRPORTS — AIRLINES
Arcade Bldg., ST. LOUIS, MO.

L. Alfred Jenny

Consulting Engineer

Air Ports, Railroad and Marine Terminals. Steam and Electric Railroads. Rates, Economics, Valuations, Litigations.
DUMONT, N. J.

Airmap Corporation of America

Aerial Surveys and Maps
Consultants and Engineers
The AIRMAP—The Engineer's Aerial
Map for City Planning, Water
Supply Studies, Zoning,
Complete Aerial Tax Map Service
42 Flatbush Extension BROOKLYN, N. Y.

Invicta Engineering Company

Research and Development
Industrial Processes
Mechanical Inventions
Competent engineering service to plants
without engineering departments and
to individuals requiring such service.
P. O. Box 2494 BIRMINGHAM, ALA.

Ira G. Hedrick, Inc.

Mem. A. S. C. E.

Consulting Engineer

Designs, Supervision, Estimates, Bridges
and Structural Work.

HOT SPRINGS NAT'L PARK, ARK.

Wadleigh and Bailey

Consulting Mining Engineers

Management, Investigation, Appraisal of
Mining Properties, Fuel Consultants, Natural Resource
Surveys.

One Broadway, NEW YORK, N. Y.

Southern Bldg., WASHINGTON, D. C.

Charlton & Davis

Civil Engineers

General Engineering Practice

Local Maps for Sale

FORT LAUDERDALE, FLA.

The Ludlow Engineers

Reports, Plans, Appraisals, Design and
Supervision—Construction—Water Supplies
—Water Works—Sewerage and Drainage
Systems—Water Purification and
Sewage Disposal—Hydro Electric Plants
—Street Paving

WINSTON-SALEM, N. C.

Elroy G. Smith

Consulting and Designing
Civil-Hydraulic EngineersIndustrial Hydro-Electric Development
a Specialty

313-313-A Herald Bldg.

AUGUSTA, GA.

Consoer, Old & Quinlan, Inc.

Mems. A. S. C. E.

Consulting Engineers

Water Supply—Sewerage—Industrial
Engineering

317 N. 11th St., ST. LOUIS, MO.

205 W. Wacker Drive, CHICAGO, ILL.

1201 St. Paul St., BALTIMORE, MD.

DIRECTORY

ARCHITECTS

CHEMICAL ENGINEERS

ENGINEERS

ACCOUNTANTS

CHEMISTS

CONTRACTORS

GEOLOGISTS

Detailed classification of specialized work undertaken by those having cards in this Directory will be found in Classified Index.

T. C. Thompson and Bros.

Incorporated 1895

General Contractors and Builders
BIRMINGHAM, ALA.
CHARLOTTE, N. C.

John Eichleay, Jr. Co.

Steel Construction
Structural Steel
House Raising and Moving
Shoring and Foundation Work
South 20th & Wharton Sts.
PITTSBURGH, PA.

Angle-Blackford Company

General Contractors

GREENSBORO, N. C.

Fiske Carter Construction Co.

General Contractors

GREENVILLE, S. C.
SPARTANBURG, S. C.

Lee A. Gridley Construction Co.

General Construction

CRANE SERVICE—FOUNDATIONS
KNOXVILLE, TENN.

Steel & Lebby

JOHN A. STEEL, JR.
THOS. D. LEBBY
Engineers and Constructors
The design and erection of concrete and
steel structures.
Helston Bank Building
KNOXVILLE, TENN.

Charles W. A'paugh & Sons

Hydraulic and Construction Engineers
Dams a Specialty; Investigations,
Estimates Free.
MANASSAS, VA.

Floyd Jennings & Co., Inc.

Plastering Contractors

132 Cain St., N. E., ATLANTA, GA.

P. L. Gomez & Company

Plastering Contractors

ATLANTA, GEORGIA

Walker Electrical Company

Electrical Contractors
General Offices: ATLANTA, GA.
Sales Offices: ATLANTA, GA., COLUMBUS, GA.
GREENSBORO, N. C.

Industrial Electrical Company

Contracting Electrical Engineers

SAVANNAH, GA.

Hoosier Engineering Co.

Erectors of Transmission Lines and
Substations

100 W. Monroe St. CHICAGO, ILL.

B. Stanley Simmons, Inc. and Associates

A. I. A.

Architects

PUBLIC AND COMMERCIAL BUILDINGS

WASHINGTON, D. C.

NEW YORK OFFICE: Fifth Ave. at 47th Street

FAMILIARIZE yourself
with the SOUTH'S pro-
gress by reading the MANU-
FACTURERS RECORD.

Tilghman Moyer Company

Bank Architects and Builders

ALLEGTON

PENNSYLVANIA

Dame-Wolfe & Co.

INDUSTRIAL SURVEYS—FINANCING—
MANAGEMENT

815 15th St., N. W.

WASHINGTON, D. C.

The J. B. McCrary Company

Engineers

ATLANTA

GEORGIA

MUNICIPAL IMPROVEMENTS

We design and construct Water-Works, Electric-light and Sewer Systems—Paving
and Road Work.

Wiedeman and Singleton, Inc.

(Successors to Paul H. Norcross)

Consulting Engineers

WATER WORKS, SEWERS, SEWAGE DISPOSAL

APPRaisALS, VALUATIONS, REPORTS

ATLANTA, GA.

Hardaway Contracting Company

Engineers Contractors

Water Power Developments, Bridges

COLUMBUS, GEORGIA

Byllesby Engineering & Management Corporation

231 S. La Salle Street

CHICAGO

NEW YORK

SAN FRANCISCO

SANDERSON & PORTER

ENGINEERS

FOR THE

FINANCING—REORGANIZATION—

DESIGN—CONSTRUCTION

OF

INDUSTRIALS AND PUBLIC UTILITIES

CHICAGO

NEW YORK

SAN FRANCISCO

James W. Billingsley

Consulting Engineers

Investigations—Plants—Specifications and Supervision
Industrial Plants—Docks—Seawalls—Roads—Bridges and Municipal Work.

NEW ORLEANS, LA.

Spoon & Lewis

Consulting Engineers

Associates

Consulting Engineers

Water Works, Sewage Works, Streets, Bridges, Industrial Plants.
Highways, City and Land Development, Port Development, Harbor Works.

Investigations—Designs—Supervision of Construction

GREENSBORO, N. C.

BOSTON, MASS.

Scofield Engineering Company

Consulting Engineers

POWER AND INDUSTRIAL PLANTS AND PROCESSES.

Design—Construction—Valuations.

Commercial Trust Bldg.,

PHILADELPHIA

J. E. Sirrine & Company

Engineers

Factory Design: Hydro- and Steam-Electric Plants: Warehouses.

Steam Utilization, Sewage Systems, Appraisals, Valuations, Reports.

General Offices: GREENVILLE, SOUTH CAROLINA

| | |
|---|--|
| <p>Battey & Kipp Incorporated Consulting and Constructing Engineers Industrial Plants Power Plants Railroad Shops, Terminals and Electrification 231 S. La Salle Street CHICAGO, ILL.</p> | <p>Webb Electric Company Electrical Contractors Industrial, Commercial and Institutional Electrical Installations. ANDERSON, S. C.</p> |
| <p>Lockwood Greene Engineers, Inc. Plans—Specifications—Reports— Appraisals—for Industrial Plants NEW YORK BOSTON CHICAGO CLEVELAND CHARLOTTE SPARTANBURG</p> | <p>Allen J. Saville, Inc. ENGINEERING AND CONSTRUCTION Electric Building RICHMOND, VIRGINIA</p> |
| <p>Ford, Bacon & Davis Incorporated Engineers 39 Broadway, New York Philadelphia Chicago San Francisco</p> | <p>A. H. Calligan & Company Contractors Specialties: Precast Concrete Piles, Foundation Masonry, Railway Construction RICHMOND VIRGINIA</p> |
| <p>The J. G. White Engineering Corporation Engineers—Constructors 43 Exchange Place NEW YORK</p> | <p>Courtenay De Kalb Mining Engineer and Economic Geologist Reports on Mineral Products Design and Advice on Treatment Plants for Ores and Non-Metallic Products 15 Gramercy Park NEW YORK, N. Y.</p> |
| <p>Kaustine Company, Inc. Sanitation Engineers Manufacturers of Private Sewage Disposal Plants, Enamelled Iron Septic Tanks, Chemical Toilets. Consulting and Designing Dolbeer Building PERRY, N. Y.</p> | <p>Charles Herbert Spring QUANTITY SURVEYS 835 Jefferson Standard Building GREENSBORO, N. C.</p> |
| <p>Mees & Mees, Inc. Engineers and Industrial Architects Reports, Designs, Supervision of Construction, Appraisals, DAMS—POWER PLANT—MUNICIPAL IMPROVEMENTS INDUSTRIAL PLANTS 618 Johnston Building CHARLOTTE, N. C.</p> | <p>Sprague & Henwood, Inc. Core and Wash Borings For Buildings, Bridges, Dams and all kinds of Minerals Anywhere in the United States or Canada Main Office SCRANTON, PENNA.</p> |
| <p>Floyd & Lochridge Consulting Engineers Hydraulic Investigations, Water Supply, Irrigation, Flood Control, Drainage Dams, and Power Development. Investigations for Financial Institutions. Wilson Building DALLAS, TEX.</p> | <p>Southern Drilling Company Diamond Core Drill Contractors Foundation Testing for Buildings, Bridges and Dams Exploration and development of coal and mineral properties. SALTVILLE, VIRGINIA</p> |
| <p>Wiley & Wilson Consulting Engineers PLANS, SPECIFICATIONS AND SUPERVISIONS STEAM AND ELECTRIC POWER PLANTS STEAM HEATING AND VENTILATING SYSTEMS Complete Mechanical and Electrical Equipment for Public and Private Buildings and for Institutional Groups. MAIN OFFICE: LYNCHBURG, VA. BRANCH OFFICE: RICHMOND, VA.</p> | <p>Mott Core Drilling Company Diamond Core Drill Contractors We Test Coal, Clays, and Mineral Properties, Foundation Testing, Dams, Bridges, Buildings, Wash Borings, Dry Samples. MAIN OFFICE HUNTINGTON, W. VA.</p> |
| <p>Cornell-Young Company Incorporated General Contractors Railroads and Highways, Reinforced Concrete and Steam Shovel Work. 704 Georgia Casualty Bldg. MACON, GEORGIA</p> | <p>Robert W. Hunt Company ENGINEERS Inspection—Tests—Consultation 22nd FLOOR INSURANCE EXCHANGE, CHICAGO Laboratories and Offices in all Large Cities</p> |
| <p>Frederick Snare Corporation Contracting Engineers Difficult Foundations and Engineering Problems a Specialty 114 Liberty Street New York PHILADELPHIA HAVANA</p> | <p>Walter H. Flood & Co. Chemical Engineers Inspection and Tests Paving and Engineering Materials Plant and street inspection on all types of pavements. Reports, specifications, 932 E. 44th St., CHICAGO, ILL. JACKSON, MISS.</p> |
| <p>Tucker & Laxton Contracting Engineers Filters, Concrete Work, Hydro-Electric and Steam Electric Construction. CHARLOTTE, NORTH CAROLINA.</p> | <p>Pittsburgh Testing Laboratory ANALYSIS INSPECTION TESTING RESEARCH PITTSBURGH, PA. Branch Offices in the Principal Cities</p> |
| <p>Hollowell, Gorham & Company Auditors, Accountants, Industrial Engineers COST SYSTEMS—AUDITS—TAX SERVICE Special Investigations for Consolidations, Reorganizations, etc. GREENSBORO, N. C. ROCKY MOUNT, N. C.</p> | <p>Established 1881 Froehling and Robertson, Inc. Inspection Engineers and Chemists Inspection of Cement, Steel, Pipe, Timber, Brick, Tile Design and control of Asphalt and Concrete Mixture. Water Analysis a Specialty. ATLANTA BALTIMORE NEW YORK RICHMOND</p> |
| | <p>Southwestern Laboratories Chemical and Testing Engineers Inspection Steel and Cement for Bridges and Buildings. Creosoted Timber, Asphalt, Brick, Cast Iron Pipe, Railroad Equipment, Bituminous Pavement at Plant, Chemical Analyses, Etc. Representation at usual points of origin. FORT WORTH DALLAS HOUSTON AMARILLO</p> |

Light as a Pencil



Pick up a Weber-Dural — instantly, you realize your fingers have closed on a different instrument... an infinitely better drawing instrument. Here is pencil-lightness... strength without weight... perfect balance... *rigidity*—made possible by Duralumin—the metal so successfully used in the framework of dirigibles. Ask to see a set of these wonderful drawing instruments.

F. WEBER CO., Inc.
1220 Buttonwood St., Phila.
Branches: St. Louis—Baltimore

WEBER-DURAL
Drawing Instruments

HOUSTON, TEXAS

Population 1920—136,000
Population 1930—290,000

That's "Progress"

KIRBY LUMBER COMPANY

Hardwood Production 1920—None
Hardwood Capacity 1930—110 Million Ft.

Including Oak Flooring, Interior Trim and Mouldings and "True to Size" Hardwood Dimension—

At the same time maintaining a Yellow Pine capacity of 225 million feet annually.

That is also "Progress"

KIRBY LUMBER COMPANY

"A wood for every Purpose"

HOUSTON, TEXAS

OPPORTUNITIES Industrial and Agricultural

The A. & W. P.—W. Ry. of Alabama and Georgia Railroads traverse a territory rich in material and potential resources. Attractive industrial sites. For information apply:

Commercial and Agricultural Dev. Dept.—Above Lines Atlanta, Georgia



WE LOOK INTO THE EARTH By use of Diamond Core Drills

We test foundations for buildings, bridges and dams. We prospect coal and mineral lands in any part of North and South America.

PENNSYLVANIA DRILLING CO.
1812 West Carson St., Pittsburgh, Pa.
Drilling Contractors

SEAWALLS WEBER SYSTEM
MANY DIFFERENT TYPES TO MEET EVERY CONDITION
SAFEST AND MOST PERMANENT CONSTRUCTION
ENORMOUS SAVING OF COST
FOR COMPLETE INFORMATION WRITE TO
SHORE-LINE BUILDERS, INC.
JACKSONVILLE, FLORIDA

WEBER SYSTEM **BULKHEADS**

The EAST COAST of FLORIDA

is an integral part of the

INDUSTRIAL SOUTH

Industries that utilize vegetable and fruit products and industries that utilize timber and its products should investigate the possibilities of the East Coast section of Florida.

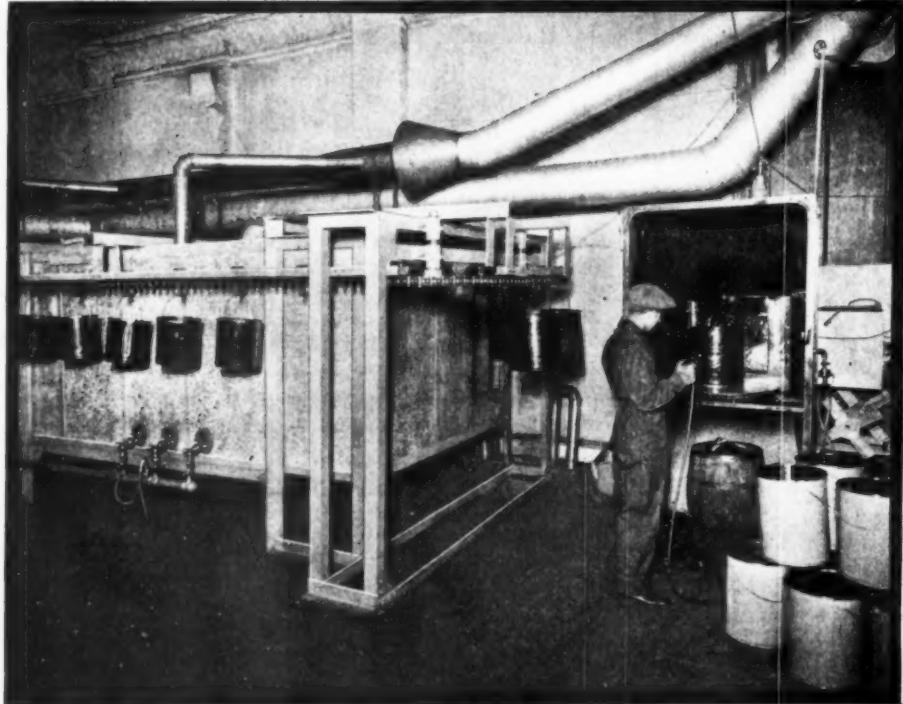
It will be our pleasure to assist you.

Write

J. W. Hoffman, Vice Pres.
Model Land Co., Flagler System
St. Augustine, Florida

The late Henry M. Flagler and his organizations have served Florida since 1886

YOU CAN DO metal
lithographing
better with gas



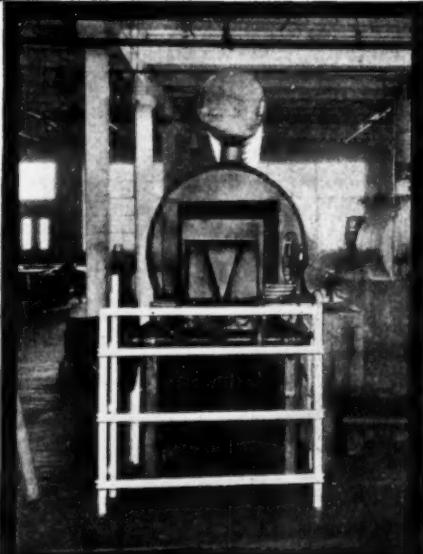
LARGE plant, small plant, it's all one to gas heat. Let the Gas Company's holder become **your** fuel bin!

THE quick dry heat generated by gas leaves the lithographed metal sheets clean and uniform in quality always. Without gas the process would become so slow (and so expensive!) that it would be impractical to compete with pasted labels. Gas puts the heat where it belongs, when it belongs—every time.

Send for your copy of the free illustrated book "GAS HEAT"



AMERICAN GAS ASSOCIATION
420 Lexington Avenue, New York



A COUNTRY *Rich* IN RAW MATERIALS

Timber



Salt and Sulphur



Oil and Gas



Coal, Clay Iron and Aluminum



Cotton



IN THE territory served with Natural Gas by this group of affiliated companies, embracing Arkansas, East Texas and North Louisiana, manufacturers find the means for a wealth of industrial undertakings.

These companies are carrying out an expansion and development program to the amount of six million dollars to increase the facilities of Natural Gas, the most economical of all fuels, in this area. Here, indeed, is a country rich in raw materials from which to make products to feed, clothe and equip the consuming millions of population all about us.

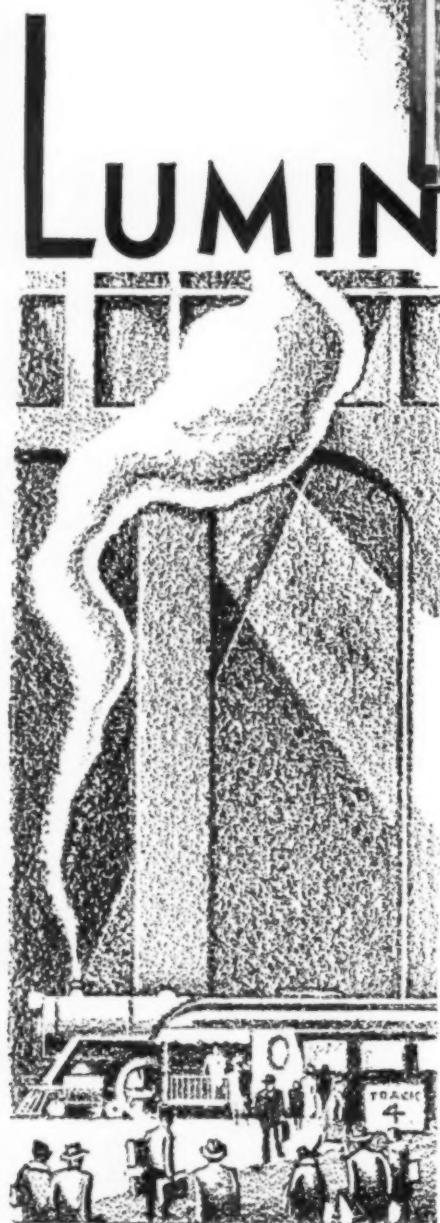
Manufacturers seeking sites for new ventures or new locations for old ones are invited to write us for detailed information with assurance of full cooperation.

Little Rock Gas & Fuel Co. — Southern Cities Distributing Co.
Public Utilities Corporation of Arkansas — Arkansas Louisiana Pipe Line Co.

ARKANSAS
NATURAL GAS  CORPORATION
General Offices, Shreveport, La.

A Cities Service Subsidiary

New York Office: 60 Wall Street

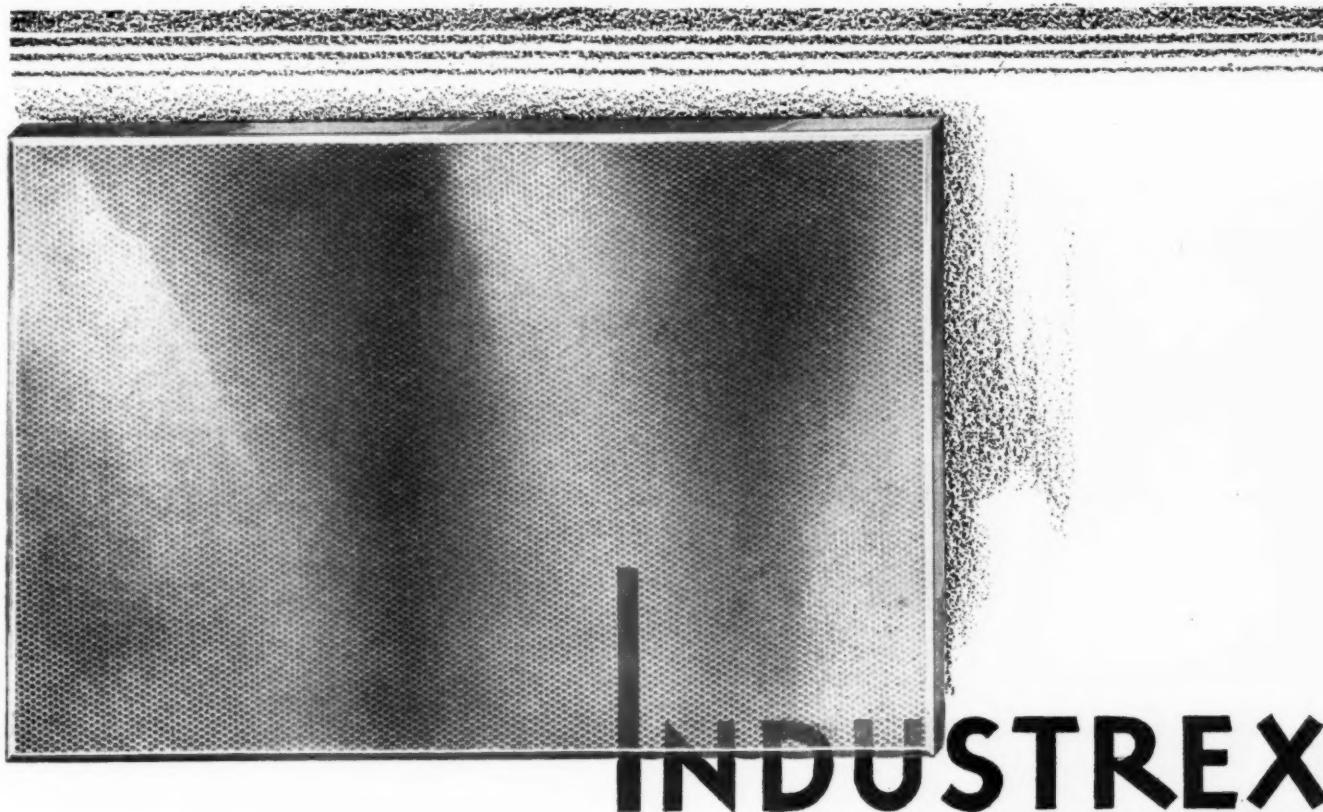


LUMINEX

• Large areas of obscured glass may well present an unsurmountable cleaning problem. For such installations LUMINEX is well adapted, provided light transmission is the prime requisite rather than diffusion. LUMINEX transmits more light than many a well-known brand of clear glass. It can be glazed and cleaned like clear glass, in fact its surface is so smooth that it has become widely known as The Smooth Glass. » » » » » » » »

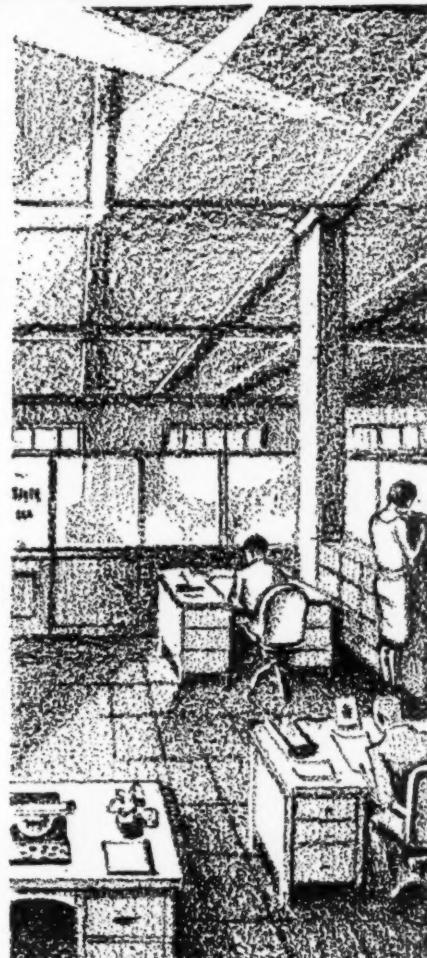
**BLUE RIDGE GLASS
KINGSPORT**

NEW YORK CITY...1 MADISON AVENUE • CHICAGO...55 E. WASHINGTON STREET



INDUSTREX

• Designed primarily for industrial glazing, INDUSTREX has found favor for skylights, partitions and many other uses where high efficiency and a measure of economy are desirable. Its lenses are small and closely grouped. Light is refracted uniformly and glare eliminated. Yet there are no deep pitted depressions to collect dirt rapidly and make cleaning difficult. Like all other Blue Ridge glass, INDUSTREX provides plate glass quality at no premium above inferior metal. » » » » » »



C O R P O R A T I O N T E N N E S S E E

Pacific Slope Agents...GOODMAN & PAIGE, 1490-1494 MISSION STREET, SAN FRANCISCO, CALIF.



Mats Not Needed Now!

After the rainy season, the weather has finally cleared on this Mississippi Levee Building job and mats have been thrown to one side.

Where soft going is encountered, which will not support even a Monighan Walker, contractors find it much easier to use a Walker with mats than to use machines operating on track sections, because the Monighan is entirely indifferent to variations in mat levels.

It will pay you to investigate the consistently high daily yardages of the Monighan Walker under very unfavorable, as well as under ordinary working conditions.

Monighan Manufacturing Corp.
937 N. Kilpatrick Ave. Chicago, Illinois

MONIGHAN

TABLE OF CONTENTS

Baltimore, Md., May 29, 1930

EDITORIALS

| | Cover Page |
|---|------------|
| This Great Land of Ours..... | 35 |
| Health Factor in Industrial Development..... | 35 |
| Can \$500,000,000 Be Raised to Endow Small Colleges?..... | 36 |
| Would Place All Public Work Under Union Domination..... | 37 |
| Communism Has No Place in the United States..... | 38 |
| The Building Outlook..... | 38 |

NEWS and FEATURE ARTICLES

| | | |
|--|--------------------------|----|
| How One Southern College Serves Its State Industrially..... | By Julian A. Burruss | 39 |
| \$10,000,000 Available for Houston Municipal Projects..... | | 42 |
| \$3,500,000 Investment in Equipment for Barge Line, Cincinnati to New Orleans..... | | 42 |
| Fluctuating Price of Lead and Zinc..... | By H. A. Knight | 43 |
| Georgia Keeps 85 Per Cent of Its College Graduates..... | By Mary Wylie Jones | 44 |
| Southern Men and Capital Helped to Build Western Railroads..... | By Dudley V. Haddock | 45 |
| Interest Quicksens in Texas Quicksilver Industry..... | By Geoffrey E. Govier | 46 |
| What a Cotton Mill Did for One Tenant Farmer..... | By Richard Woods Edmonds | 47 |
| Open Bids on \$2,000,000 New Orleans Hospital..... | | 48 |
| Illiteracy's Effect Upon Industry..... | By Lee Lamar Robinson | 49 |
| Precooling Vegetables a Factor in Profitable Marketing..... | By R. L. Cornell | 50 |
| Miniatures of Southern Cities..... | | 52 |
| Construction Progress on \$16,000,000 Canal, New Orleans to Corpus Christi..... | | 54 |
| \$16,000,000 Baltimore Loans to Be Voted on in November..... | | 54 |
| The Iron Industry in 1929..... | | 55 |
| Shell Petroleum Refinery in Louisiana..... | | 56 |
| \$5,000,000 Building Projected at St. Louis..... | | 57 |
| \$300,000,000 Washington Improvement Program to Be Completed in Ten Years..... | | 57 |
| \$1,200,000 Power Project Under Way in Virginia..... | | 57 |

SPECIAL DEPARTMENTS

Construction, New Industries and Contracts, 20 Pages Beginning on Page 62

| | | | |
|--|----|----------------------------------|----|
| Letters From Our Readers..... | 58 | Industrial News of Interest..... | 80 |
| Iron, Steel and Metal Market..... | 59 | Trade Literature | 81 |
| New and Improved Equipment..... | 61 | Financial News | 83 |
| | | | |
| Classified Reference for Buyers..... | | 100 | |
| Alphabetical Index to Advertisers..... | | 116 | |

MANUFACTURERS RECORD

RICHARD H. EDMONDS, Editor

MAIN OFFICE

Manufacturers Record Building,
Commerce and Water Streets,
Baltimore, Md.

Published Every Thursday

by the

MANUFACTURERS RECORD
PUBLISHING CO.

BRANCH OFFICES

Chicago—11 S. LaSalle St.
New York—901 Singer Bldg.

Subscription Rates: \$6.50 a year (in advance); six months, \$3.50; three months, \$2.00 to United States, Mexico, Cuba, Porto Rico, Hawaii and the Philippines. For Canada add postage \$1.00 a year. For other foreign countries add postage \$3.50 a year.

PUBLISHERS DAILY CONSTRUCTION BULLETIN AND BLUE BOOK OF SOUTHERN PROGRESS
Member A.B.C.

LESCHEN WIRE ROPE

The material and workmanship that is a part of every Leschen Wire Rope, make it safe, durable and economical.

ESTABLISHED 1857

A. Leschen & Sons Rope Co.
St. Louis Mo.
New York Chicago Denver
San Francisco

All Leschen Steel Wire Rope is made of Acid OpenHearth Steel Wire

LEADITE
Trade Mark Registered U.S. Pat. Office

For Jointing Cast-Iron Water Mains
Saves at Least 75%

Leadite Tested and Used for Over 30 Years
Leadite Joints Improve with Age
The Leadite Co., Land Title Bldg., Philadelphia, Pa.

"See our Full Page Ad in 2nd issue each month"

No Caulking'

We Grow These Tanks!

To make sure of the quality of the cypress that goes into "The Tank with a Reputation" we use wood from our own trees, cut in our own sawmills, finished in our own shops by our own workmen with the benefit of thirty years experience in tank designing and building.

The combination means real economy to you in cost and in long, faithful service. Get the Caldwell story the next time you are thinking of tanks.

Send for Catalog

W. E. Caldwell Co.
Incorporated
1900 Brook St., Louisville, Kentucky

Caldwell
TANKS
AND
TOWERS

SCAIFE COPPER-BRAZED TANKS
for Air, Gas and Liquids

Welded Tanks Riveted Tanks Rivet-Weld Tanks

FOUNDED 1802
W.M.B. SCAIFE & SONS CO.
PITTSBURGH, PA.

A.S.M.E. Tanks I.C.C. Tanks

WATER SOFTENERS and FILTERS
(127 Years old—Founded 1802)
WM. B. SCAIFE & SONS CO.
Main Office OAKMONT, PA.
Pittsburgh New York Chicago

Air Power 75 Feet Under Water Cuts Piles in 3 Minutes



A striking contrast to hand sawing was witnessed recently—when air power cut 1000 piles from the bottom of the harbor at Vancouver. Piles were 14 to 18 inches thick, and set in water 40 to 75 feet deep.

Two divers did the cutting with an air saw, using air at 100 lbs. from a Sullivan Vibrationless

This profit-making application of air is one of hundreds, on which Sullivan Air Equipment is at work. Many ideas are pictured and described in Sullivan booklets, free on request. Ask for "Speed Up With Air".

Compressor. A lever on the saw handle held the saw to the pile. Air was exhausted directly into the water, at the 40 foot depth, but was brought to the surface on deeper cutting.

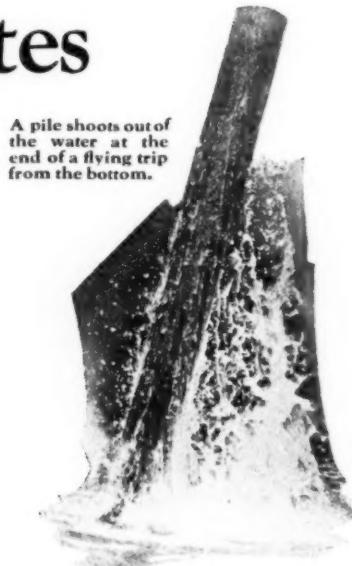
Only 3 minutes were needed to saw through a pile, and start it on its way to the surface. Send for the picture book, "Speed Up With Air".

Pictures by courtesy of Construction Methods

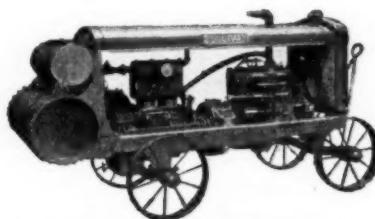
SULLIVAN AIR EQUIPMENT
Compressors, Concrete Breakers, Clay Spaders, Rock Drills, Drill Sharpeners, Portable Hoists

Sullivan Machinery Company

718 Wrigley Bldg., Chicago



A pile shoots out of the water at the end of a flying trip from the bottom.



The 110-ft. Sullivan Vibrationless Compressor... one of nine Sullivan sizes.

Manufacturers Record

Reg. U. S. Pat. Off.

Devoted to the Upbuilding of the Nation Through the Development
of the South and Southwest as the Nation's Greatest Material Asset

Vol. XCVII No. 22
Weekly

BALTIMORE, MAY 29, 1930

{ Single Copies, 20 Cents.
\$6.50 a Year.

Health Factor in Industrial Development

A FEW weeks ago the MANUFACTURERS RECORD editorially discussed the relative health conditions of the South compared with some of the other sections of the country. The comparison was based on mortality rates in the Southern states and the rate prevailing in certain Northern and Western states. The record completely disproved the mistaken idea among a few people outside of the South that the people living in the South are not a good risk for life insurance. Likewise, the editorial brought out the fact that Southern life insurance companies have made great progress. They are now writing over \$2,600,000,000 a year of new life insurance business and have over \$7,417,000,000 of total insurance in force. Nearly \$20,000,000,000 of ordinary, industrial and group insurance is now carried on the lives of Southern policyholders by all the old line companies of the country. Further, life insurance companies have invested in stocks and bonds and in loans to Southern people approximately \$3,000,000,000. Also we now add the significant fact that the South has proved a haven for those from the North and West who came to this section in order to prolong their lives. This applies not only to those seeking health and recreation at Southern winter resorts, but to those who have become permanent residents.

All of which bears directly on the health factor in Southern industrial development. Business men have at last recognized the importance and value of healthful living conditions—good food, plenty of pure air and abundant sunshine. Buildings and plants in the North are being so designed and constructed as to secure for the occupants the greatest possible benefit from sunlight. That is why the South, with its mild climate and greater amount of sunshine, will prove more and more an attractive section for the expansion of manufacturing, for with the modern "daylight" factories now being erected in the South the workers in them will have an advantage over those in Northern plants.

Writing in the Life Edition of Best's Insurance News, Frederick L. Hoffman, LL.D., consulting statistician of the Prudential Life Insurance Company of America, corroborates all that the MANUFACTURERS RECORD said. In an exhaustive analysis of the health question, under the title "The South As An Insurance

Field," Dr. Hoffman, after historically sketching the conditions prevailing some 30 years ago with the gradual improvement since then in sanitation and health conditions, to the point where low rates are given for the South in many of the important causes of death, makes some very important statements:

In pulmonary tuberculosis, decidedly lower figures prevail in most of the Southern states than for the registration area of the country as a whole.

In cancer also the death rates for the South are decidedly below the average.

Pellagra, to which much publicity has been given in the press, prevails in a few states exclusively, but the mortality is a relatively insignificant item and the disease rarely occurs among the insured population.

Diabetes is less common in the South than in the North and West.

Deaths from alcoholism are no longer as common in the South as was formerly the case.

Likewise the death rate from cirrhosis of the liver is generally lower in the South than in the country at large.

The mortality for all heart affections, which practically constitute a leading cause of death throughout the country, shows a decidedly lower rate in the South than in other sections.

Likewise the death rate from pneumonia, which reaches such high proportions in the North and West, is much lower in the Southern states.

The mortality from acute and chronic nephritis—a very serious item in the mortality experience of life insurance companies—is also lower in the South than in the North and West.

Dr. Hoffman bases all of his conclusions as cited in the foregoing upon the mortality rate per 100,000 population, as shown by the United States Census, covering the registration area embracing the states and sections used in his comparison. In closing his article Dr. Hoffman makes this significant statement:

"On the whole, therefore, the South today shows to better advantage than the North and West in most of the causes of death which figure heavily in life insurance companies mortality experience. If, therefore, that experience is not all

that it might be, underlying causes have chiefly to do with medical or agency selection rather than with local factors opposed to health and longevity. As one who is thoroughly familiar with the health administration of Southern states, I do not hesitate to say that most of these states now have health departments fully equal to those of the states in the North and West. There is a thoroughly progressive community spirit in all the outstanding and smaller cities which cannot but produce results of benefit to all concerned. The new South in very truth is a marvelous contrast to the South of even 30 years ago. The new South is not only industrious and prosperous but is also blessed with abundant good health. The difficulties of the past were not essentially attributable to climatic conditions but to apathy and indifference in matters of sanitary administration. These are now being attended to as vigorously and willingly as in any other part of the country, foreshadowing an even more impressive state of facts, when the data become available for more recent years, in the years to come. No life insurance company need, therefore, hesitate to extend its business operations to the South or to apply intensive methods of securing business provided it safeguards its interests by the most careful selection of agency administration and medical examiners that go with it."

Surely in the light of such facts from an insurance authority in the statement that "the South is blessed with abundant good health," and that "no life insurance company need hesitate to extend its business operations in the South," the MANUFACTURERS RECORD is well justified in resting its case.

A Proper Step

TWELVE Virginians sailed for England last week as guests of the Association of British Chambers of Commerce, the Federation of British Industries and the Chamber of Shipping of the United Kingdom. The party, organized by the Virginia State Chamber of Commerce, Richmond, will make the trip without any expense to the Virginia organization, repaying the recent "visit" of the British delegation to Virginia. The Virginia delegation will spend a month in England working for closer business and social relationships between England and the United States. Members of the party are Edward L. Stone, Roanoke; S. Heth Tyler, Norfolk; J. Gordon Bohannan, Petersburg, president of the State Chamber of Commerce and head of the party; J. Scott Parrish, Richmond; James R. Gilliam, Jr., Lynchburg; Major LeRoy Hodges, Richmond; Col. A. B. Carrington, Danville; General S. G. Waller, Front Royal; George P. Coleman, Williamsburg; Junius P. Fishburn, Roanoke; and Richard Crane, Westover.

Business men of other Southern states may well profit by the example set by Virginia, not only in seeking closer relations through personal contact with business men of Great Britain and Europe, but with our neighboring customers in Cuba, Mexico and in Central America. Connected with these countries now by air lines, the South should take advantage of its greater opportunity to widen trade with the whole of Latin-America by more cordial and definite cultivation of the commercial and industrial interests of those countries. Inasmuch as the value of exports of the United States to the Southern republics is over \$900,000,000 annually, manufacturers of the South should consider the possibilities this vast market offers for a wider distribution of their products.

Can \$500,000,000 Be Raised To Endow Small Colleges?

THERE was held a short time ago in Chicago a convention of representatives of nearly 300 colleges to discuss means of raising \$500,000,000 in additional endowments for 500 of the smaller colleges of the country. Dr. Ward, of the Western Maryland College, stated at the gathering that there are between 700 and 800 colleges and universities in the country. In these schools, he said, there are enrolled about 1,000,000 young men and women, and within the next decade there will probably be an enrollment of more than 1,500,000 students. About 250,000 of these are in state universities and an equal number in 100 highly endowed institutions. These schools, said he, have practically reached capacity enrollment.

Dr. Ward recognizes that the task of raising \$500,000,000 is difficult, but declares it is by no means impossible. Leading financiers, said he, have advised him that the plan is feasible and practicable. If 500 institutions could raise \$500,000,000 and thus establish their ability to function effectively, the way would be open for establishment of an educational foundation to assist these schools in reaching a position where they could qualify as first rank colleges.

This convention and the statements made by Dr. Ward followed closely an article by Hon. B. G. Lowry, former Congressman from Mississippi, in a previous issue of the MANUFACTURERS RECORD in behalf of small colleges in the agricultural regions of the West and South. In commenting on Mr. Lowry's article, Guy M. Walker, a financial authority of New York, wrote:

"Some 25 years ago I published an article which created a sensation at the time, 'The Small College, the Source of Successful Men.' It ran through some 25 editions in pamphlet form, but has been out of press for some time.

"It has been one of the significant things in connection with American education that attendance at the smaller college has been so largely drawn from people living near and adjacent to the college and it has been the large number of these small colleges, poor and struggling, scattered all over our country that has produced the extraordinary diffusion of higher education throughout America. For years I have felt that it was a great mistake to pile up endowments, and that it would be far better to have a thousand small colleges with a million endowment each scattered throughout the country.

"Some three years ago the editor of *The Financier*, wrote telling me he had been reading a life of James J. Hill, and had just read that about 1908 Mr. Hill ran across this article of mine on small colleges and became so much impressed that he employed experts to investigate it, and after some time they reported there was no doubt that a small college gave a better education and developed more character than a big one. On the basis of this report Hill proposed to establish a \$10,000,000 fund, the income of which was to support eight or ten small colleges; but before it was possible to get anything done Hill died."

In a later letter Mr. Walker said:

"The Massachusetts Institute of Technology has elected a new president, Professor Compton, now and for some years past Professor of Physics at Princeton University. But where did he come from, do you suppose? Not from Massachusetts Tech nor any other big school but from little Wooster College out in Wooster, Ohio.

"The University of Michigan has just elected a new president, Professor Ruthven. Where do you suppose he came from? Little Morningside College out in Sioux City, Iowa."

Would Place All Public Work Under Union Domination

THE bill known as the Sproul Bill (H. R. 9232), which has been introduced in Congress, is a dangerous measure. Dangerous to the prosperity of the country and to the freedom of action of employing contractors and their employees.

It should be defeated.

It provides:

"That on and after the passage of this Act no laborer or mechanic, who is or may be employed by any contractor or subcontractor on the construction, alteration, or repair of any public work of the United States in any city or town in any State of the United States, shall be paid a less wage rate for any services rendered by him in such city or town to such contractor or subcontractor while so employed than the then lowest existing wage rate established for such services in private industry in such city or town, either by the joint action of private employers *and* [italics ours] an organization of employees belonging to or affiliated with the American Federation of Labor, or by the acceptance of such wage rates by private employers and an organization of employees belonging to or affiliated with the American Federation of Labor, if there be such an established wage rate for such services in effect at said time in such city or town. * * *

"The provisions of Section 1 hereof shall be incorporated in every contract to which the United States is a party and to which the provisions of Section 1 hereof apply, and said provision shall be a part of every such contract; and if any laborers or mechanics are paid less by any contractor or subcontractor than the wage rate required by Section 1 hereof then, in that event, there shall be deducted from the contract price of the contractor, on account thereof, for each laborer and each mechanic so paid less than the wage rate required by Section 1 hereof, a sum in dollars equal to five times the number of days he has been so paid less than the wage rate required by Section 1 hereof, and the contract shall so stipulate. The whole amount so deducted shall revert to the Treasury of the United States."

The bill was presented as a substitute for a number of bills on the same subject, and embodies many debatable clauses so far as contractors are concerned. Evidently its passage would seriously hamper the carrying out of the big building program initiated by the Government in its effort to relieve unemployment. The bill apparently aims primarily to force contractors on public work to pay the union wage scale, and to join the ranks of closed shop union operation. Some hold the bill in its present form is unconstitutional, although admitting slight changes—that would not basically affect it—would make it constitutional. That it contains possibilities of almost unlimited mischief seems clear.

It may or may not be acted upon at this session, but at this writing the possibility is strong that it will be, and those in a position to know express the view that it may pass. A large number of Congressmen come up for reelection this fall, many of whom are reported as opposed to the bill. They may, however, vote for it for the sake of expediency, fearing the strength of the American Federation of Labor.

Contractors are not generally aroused to or aware of the bill's dangers. The very intensity of organized labor's efforts to get it on the consent calendar at this session indicates that labor leaders look for great advantages from its enactment. The rush to get it

into a session in which expediency may far overbalance the public interest confirms the deduction that it is a vicious measure.

A very brief consideration of the bill suffices to suggest numerous complications that would arise following its enactment. A subcontractor is regarded as any dealer in building supplies that have to be made to specifications. Thus, the steel fabricator who cuts and punches the structural steel; the manufacturer who makes windows or skylights to specification, or a stone or marble quarry furnishing blocks cut to specifications—all of these are subcontractors. Let us see how, in all probability, the bill would apply to these classes.

Suppose a Georgia, an Alabama or other Southern quarryman secures contracts for stone on two or three post office buildings scattered throughout the South, and finds that the stone cutters on one of the jobs get union wages and that those wages are higher than those paid for the same classification in the quarry. His work may be done in a quarry 500 miles away, but he is nevertheless a subcontractor on the job. Would he, then, be forced to raise his wages to equal those in that town? If so, he may well lose money on some or all of his contracts. But that is only the start. While the foregoing contracts are being executed, the quarryman, we will say, considers bidding on a contract to supply stone for one of the new government buildings in Washington—where, we may assume, union wages are considerably higher than in the quarry. Must he be prepared again to raise his wages if his bid is successful? Apparently he must, or else not bid. Under such conditions no firm could afford to accept a contract. The resulting delays in executing Government contracts would certainly not help the unemployment situation—or, for that matter anything else.

The Georgia Manufacturers' Association has written all Georgia Congressmen protesting the passage of this law. With one exception the state's representatives have promised consideration of the protest, when the bill comes before them. The association in a public statement points out:

"This is the first time in history that the American Federation of Labor has been expressly mentioned in connection with such legislation. It dignifies a private agency into a super-organization, with power to correct the economic law of supply and demand, and with force to drive any contractor, or subcontractor, into the ranks of closed shop union operation.

"The Supreme Court of the State of Georgia, in the minimum wage case brought against the City of Atlanta, held that even the city could not interfere in the matter of wages paid by contractors on municipal work, and the city lost the case. That decision should guide our Congressmen.

"There is much to this bill, and its dangers, beyond the price paid labor on government construction. No contractor bids on government work as his sole effort. If the Sproul Bill becomes a law, all other construction which this contractor figures on must be paid for at the same base or there is trouble."

Communism Has No Place in the United States

ALL praise to the definite stand the Masons of North Carolina are taking against communism! Grand Commander Bahnson reports on the attitude of North Carolina colleges as revealed through a questionnaire that the influences of atheism and communism have "not yet invaded North Carolina institutions to a dangerous degree." Nevertheless, according to an editorial in the Charlotte Observer, Commander Bahnson advises continued watchfulness and diligence. "We, as Knights Templar," he says, "stand for things that the communists and their associates are trying to tear down. Each of us has pledged allegiance to two flags, the banner of the Cross and the Stars and Stripes of our country; the communist tries to disregard both, and due to some mistaken idea of 'free speech' provision of the Constitution, we or our courts permit them to say things against what those flags represent, which if said about any one of us or our families would subject them to action for criminal libel. We cannot do more than reiterate our principles, but as individuals we can do a great deal to combat this insidious evil which is slowly, but surely, spreading through our state."

The Knights Templar of every state in the South, and the country at large, might well issue such a warning note. Nothing should be done that could give the communists an opportunity to pose as martyrs, as is so aptly pointed out in the Observer editorial, but the faith of American citizens in their institutions and in the future of this nation should be strengthened. Here and there the ugly head of communism has appeared, but we must look more closely to the insidious movements which in time might undermine our laws and institutions. The leaders of such movements have no place in this country. If additional information is wanted, we suggest that those interested read two recent books, "Sinister Shadows" and "The Red Fog." Also, another timely book, "Reds and Lost Wages" throws further light on recent labor disturbances in different parts of the country.

Representative Hamilton Fish, Jr., of New York, before a recent Congressional Committee, made some very pertinent observations on this subject and he regretfully charges that the hands of the various Federal departments have been shamefully tied, through failure of Congress to grant sufficient authority or to provide adequate funds to investigate either the activities or the propaganda of American communists or of alien communists in the United States. Congressman Fish asks:

"Why should American citizens be sent to jail for committing one offense against the law, when communists, who seek to undermine and destroy our form of government and our laws, go scot-free? There have been only 15 communists deported in the last four years.

"Let us not forget that the Communist Internationale and Soviet Government are one and inseparable, obeying orders issued by the Political Bureau of the Russian Communist party in Moscow.

"Let the American communists cease to seek the overthrow

of our government, or depart to a country more congenial to them and their doctrine. We have tolerated their criminal activities too long; let them go forth or be deported or confined in some penal colony as far as possible from the United States, where they can try out their communistic ideas to their hearts' content.

"There can be no compromise in the United States between those who give allegiance to the Red flag and those who give allegiance to the American flag."

The South has been remarkably free from the taint of communism. It has had trouble enough, however, to thoroughly arouse the people to the need of protecting themselves against such a doctrine. Its citizens must be ever on the alert to guard against any semblance of such a cancerous growth fastening its roots in our institutions. May the warning of the Masons be heeded by all loyal Americans!

The Building Outlook

BUILDING activities in 1929 were considerably below normal. This is true also of the early months of the present year. It is believed, however, that the 1930 total will show a material increase because of construction undertaken during the last six months of this year.

Modernization of existing property offers the greatest present opportunity for the building industry. As the Atlanta Constitution editorially emphasizes, there is a large amount of construction work that should be done now, work for which owners of the property have the money to pay. Numerous business properties and residences need repairs or reconstruction. Labor and building materials are available. Why not use them? Money invested in improvements will filter back through the purchase of cement, brick, stone, sand, gravel, steel, hardware, roofing, lumber, paint, paper, copper, glass, and many other materials into wages for employes in all lines of retail trade. A recent Weekly Bulletin of Ernst & Ernst, accountants and auditors, with branch offices in principal cities throughout the country, states:

"There is a definite, philosophical and economic foundation for the unusual interest in building at this time, and it goes beyond the more tangible figures on what industries are doing in these particular months. It has been well established that this country does not overbuild, except perhaps for a year or two at a time. The beginning of a healthy revival, although probably not a boom, is definitely in sight for this year. It is the beginning."

Open Shop Conference

THE American Plan-Open Shop-Conference is to be held in Duluth, Minn., June 24. It is the annual gathering of representative business men of the country who believe in freedom alike for the employer and employee, unfettered by the dictates of unionism. The next annual conference should be held in the South, and any Southern city interested should extend an invitation immediately to the chairman, A. C. Rees, Salt Lake City, Utah.

How One Southern College Serves Its State Industrially

By JULIAN A. BURRUSS, President, Virginia Polytechnic Institute, Blacksburg.

Virginia is rapidly developing commercially and industrially, and under proper guidance this development will be so balanced as to fit in with and promote agricultural development and prosperity. This striking development of industry and its close relationship to agriculture has placed a great responsibility on the Virginia Polytechnic Institute, which is the State Agricultural and Mechanical College. This institution is endeavoring to meet this responsibility by doing its utmost to prepare students for agricultural and industrial leadership, to conduct investigations and experiments of importance to state interests, and to make information easily available through extension service.

To carry out this program a budget of \$3,212,708, the largest in the 58 years of the institution's existence, has just been approved by the Board of Visitors for the current fiscal period. Of this amount, approximately \$550,000 will be devoted to new buildings and equipment, \$300,000 to research and \$850,000 to extension service.

Already bids have been asked for a Dairy Products Building which is to be the first unit of a proposed agricultural group. This building with fixed equipment will cost about \$150,000. Plans call for a four-story building of native stone, to harmonize with the other campus structures. It will contain dairy manufacturing and testing laboratories, ice-making machinery, laboratories for manufacture of cheese, butter, condensed and powdered milk, and ice cream. A semi-gravity flow system is to be installed, in which milk will be pumped to the third floor, to be processed en

route to the second floor where it will be bottled.

A Mechanical Engineering Laboratory will be erected at once on the site of the old heating and power plant. It will provide additional steam, gas, air, and hydraulic laboratories, and also laboratories for study and research in fuel combustion.

Dormitories to accommodate one hundred additional students are being completed for occupancy in September.

Appropriations have been included for additions to the Chemical Engineering Building, which will practically double the present space, providing more adequately for the rayon laboratory and the laboratories for sanitary engineering. A three-story stone Physics Building will be erected during the year, and also one unit of an Agricultural Engineering Building to provide for the rapidly expanding activities of that important department. Plans for these three buildings are in preparation.

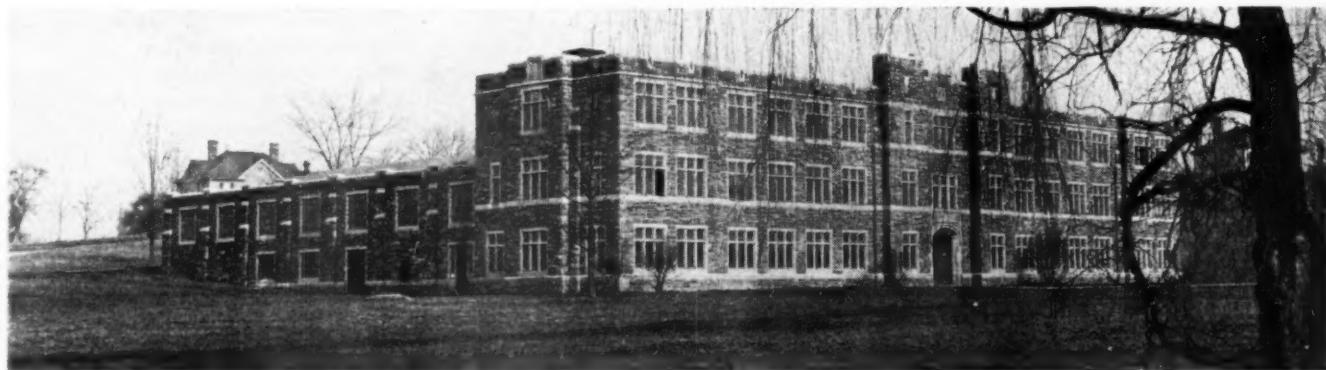
Last September the new four-story Engineering Hall was completed and occupied by the architectural, civil, electrical and industrial engineering departments. At the same time the new \$350,000 heating and power plant was put into operation. In it various steam and electrical power tests, and coal utilization experiments, are being conducted by members of the Engineering Experiment Station staff, with special attention to Virginia coals.

While the instruction of students in various phases of agricultural, engineering, industrial and commercial work is the most important function of the Virginia Polytechnic Institute, it has devoted increasing attention to research

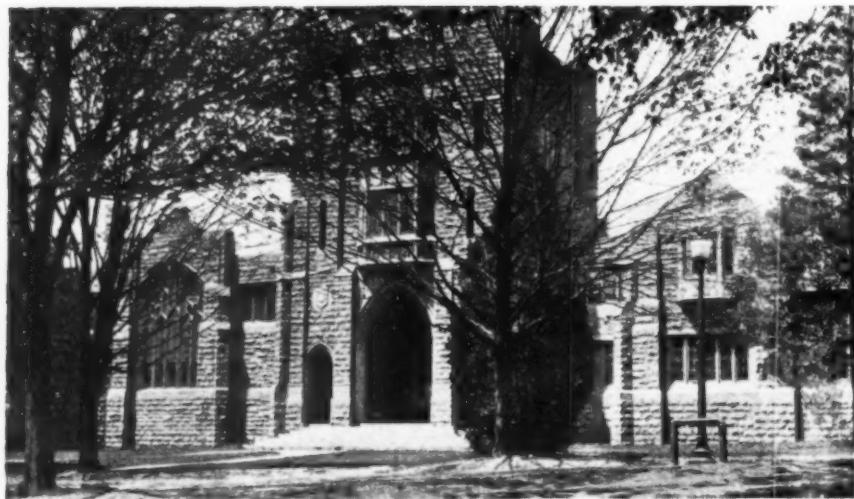
and extension service, both in engineering and agriculture.

In the Agricultural Experiment Station at present, research is being conducted on more than 115 projects, some of which are important to industry as well as to farming; e. g., the recent discovery at this station that goulac and glutrin, trade names for the dry and liquid forms of waste sulphite liquor from paper and pulp mills, can be satisfactorily used in spraying fruit trees for pest control. Outstanding results have been secured in rural electrification. Tractor tests and other farm machinery studies; nutrition experiments and the production of meat, milk and milk products; investigations in the use of Virginia soft wheat flour and in the handling and cooking of the products of Virginia's \$6,000,000 hog industry; development of improved varieties of cereals, higher yielding strains of potatoes, forage crops, tobacco, peanuts, cotton, etc.; long-time fertilizer experiments; the breeding, treatment, packing and marketing of large and small fruits; numerous projects for the control of plant and animal diseases and pests, with special attention to Virginia's enormous poultry and orchard interests; and a variety of studies covering practically all phases of rural life and the business of farming in this State, these indicate the busy and serviceable program of the agricultural research staff. In addition it may be noted that in the recent session of the Legislature an act was passed providing for a soil survey of the state, by the Agricultural Experiment Station.

For service to industries, especially in Virginia, an Engineering Experiment Station is operated. Here problems in



In This Building, Davidson Hall, Are the Chemistry, Physics, Metallurgy and Geology Departments



Entrance to Mechanic Arts Building

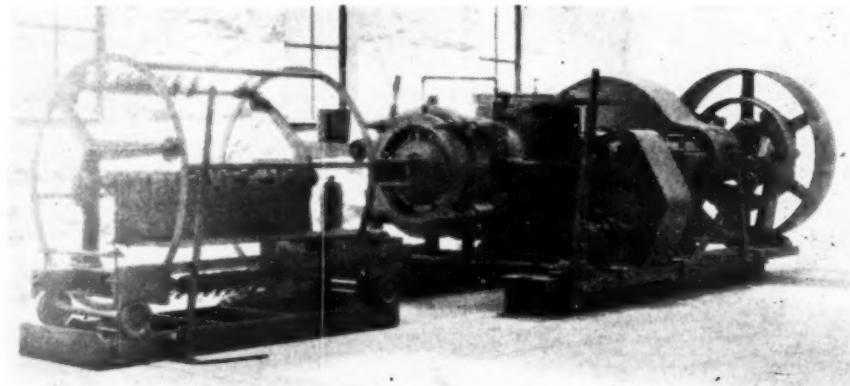
mechanics which are worrying those in industry are studied by trained research workers. Upon completion of a project the results are published. In some cases, several manufacturers of a product unite to furnish a fellowship for a graduate student to study problems of importance to their industry. For example, the Virginia Associated Plumbing and Heating Contractors are now maintaining such a fellowship here. A few of the projects under way or recently completed may be cited to show the type of work done by the institution's engineering and industrial research division. These include studies, tests, and experiments concerning various building materials, such as native stone, sand, brick, tile, cement and timber, with a long-time investigation of the effect of storage on hydrated lime; wood impregnation and preservation; veneers, glues, varnishes and furniture finishes; utilization and disposal of wastes from woolen mills, tanneries, wood-using plants, etc.; production of rayon; alloys, especially those related to printing; welded joints; gear efficiency; thermal and electrical conductivity; foundry products; road materials; classification of Virginia coals.

ash and coking in coals; chemical control of sewage disposal; plumbing, heating, ventilating and refrigerating equipment problems.

In order to disseminate information obtained by the Engineering Experiment Station and to utilize the technical abilities of the faculty for promotion of the

by preparing industrial surveys and by making available engineering advice on developmental projects; Bureau of Industrial Service, which places the resources of the School of Engineering at the service of industry for technical advice and information by interview or correspondence; Bureau of Extension Instruction, which offers technical instruction through correspondence study, short courses and institutes, lectures, film and slide service and bulletins.

In the last 18 months industrial surveys by the Engineering Extension Division have been completed for one-fourth of the cities and counties of Virginia. An industrial and agricultural survey of Halifax County, made jointly by the Engineering and Agricultural Extension Divisions, has just come from the press. Information contained in these surveys embraces important facts as to natural resources—agriculture, timber, and minerals — labor, power, transportation, water supplies, industrial sites, types of industry desired, population, local attitude toward industry, weather, government, taxes, health and police protection, banking facilities, churches, facilities for education and recreation, and

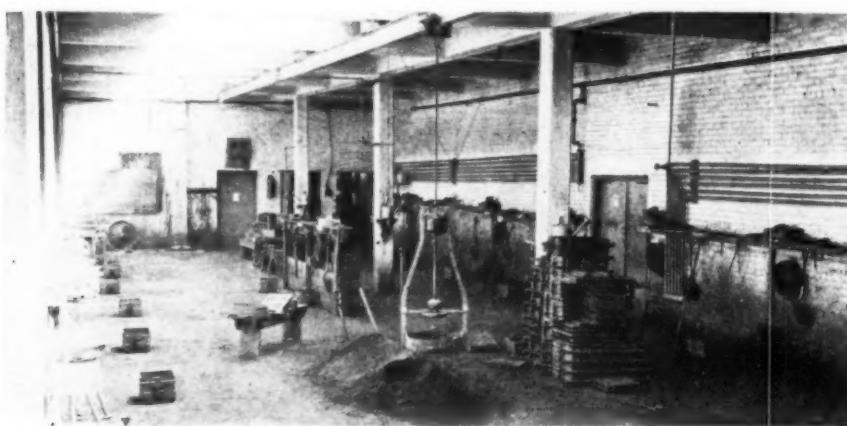


Equipment in the Brick-Making Laboratory

state's industrial interests, an Engineering Extension Division has been established. This is organized in three divisions: Bureau of Community Development, which assists cities and counties

other civic refinements. Statistical tables, maps and pictures have been utilized to illustrate and clarify the findings.

A desire to assist in the development of Virginia's wood-using industries and the economic utilization of the state's forestry products, led to inauguration of a department of wood technology, which conducted a wood-using survey of the state. This was recently published in a 170-page illustrated bulletin, now being widely distributed, requests for it having been received from practically every state and even from places as far removed as Alaska and New Zealand. Such information as types and kinds of woods used by each wood-using industry in Virginia was accurately tabulated. A table giving the different kinds of woods used in 1911 and in 1928, the amount and percentage of the total, the percentage of this grown in Virginia,



Where the Foundry Work Is Done

and the average cost per thousand board feet at the factory, was also included. Description of the woods grown in the Tidewater, Piedmont, Blue Ridge, Valley and Appalachian regions is given in some detail, with many illustrations of different growths. Rounding out the bulletin is a wood industry directory, arranged by counties and by industries; and a section tabulating the various uses to which different species of wood are put, with numerous illustrations.

Possibilities for developing ceramic industries in Virginia led to establishment of a department of ceramic engineering which has had a large part in formation of the Virginia Clay Products Association. Tests of various ceramic products, such as bricks, hollow tile and the like are being made by this department. In March a bulletin on "Physical Properties of Common and Face Brick Manufactured in Virginia" was published. Results of tests made to determine



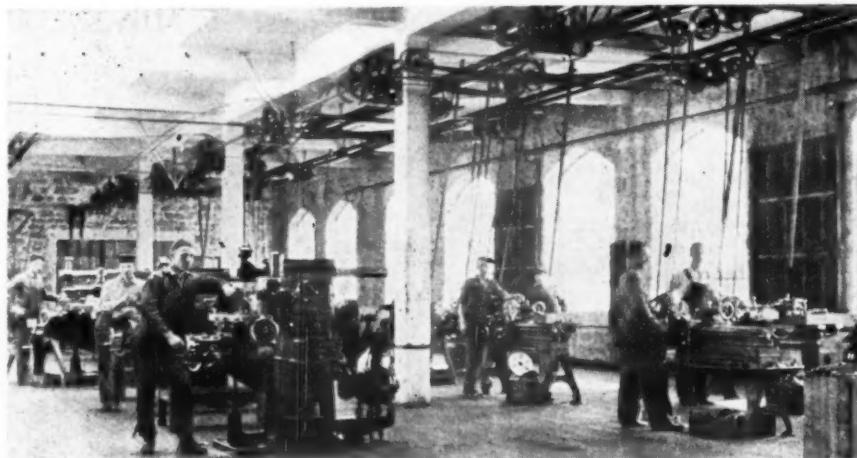
Patton Hall, Where the Engineering Departments Are Located

Chemical problems arising in the making of rayon are being studied in a specially equipped laboratory as one of the chemical engineering projects; and experiments which may bring results affecting methods now used in making rayon are being conducted. Another im-

plies in an effort to help solve their problems of waste elimination. Methods of treating waste before it is allowed to go into streams, and of converting waste into usable by-products, are other phases being given attention by these chemists.

Short courses have been given at the college and in several cities for contractors and others interested in design and control of concrete mixtures, for electric and other types of metermen, and for plumbing and heating contractors. A number of industrial workers are pursuing studies relating to their work through correspondence. Several members of the staff are cooperating with the State Department of Health in assisting communities to secure suitable water supplies and sewage disposal plants and to operate these plants efficiently.

The local and special surveys, investigations and extension service have made such an important contribution to the industrial development of communities surveyed and otherwise served, and of the state at large, that work is now in progress on an industrial survey of the entire state. Much information included in the completed surveys will be incorporated in the state survey. It is expected that the published report of the survey will serve as a source-book on the industrial resources of Virginia;



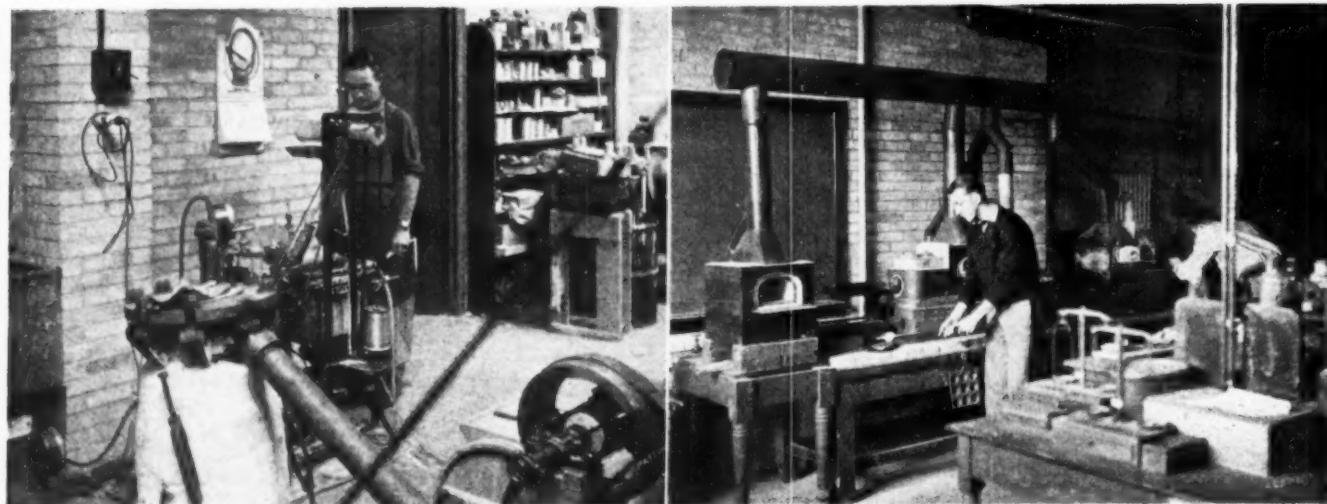
Working With the Big Machines

the compressive strength, transverse strength, absorptive characteristics, and alternate freezing and thawing resistance were given in detail. Samples included in these tests were well representative of Virginia clay products, as they included bricks from 29 plants, or 93 per cent of the brick manufactured in Virginia. Among other results, it was found that 98.14 per cent of the samples submitted for testing met the standards of the American Society for Testing Materials and requirements of the building codes, while 81.47 per cent would be classed as hard, well-fired bricks. In comparing results of these tests with tests of bricks manufactured in other states, it was found that physical properties of both common and face brick manufactured in Virginia are well above the average, and that they rank favorably with those produced elsewhere. Many specimens of clay, feldspar and kaolin from various sections of the state are being tested to determine their industrial worth.

portant aspect of chemical engineering is found in the stream pollution studies being conducted in cooperation with the state sanitary engineer. The water is analyzed to determine the kinds and amounts of impurities contained. Work is also being done with several indus-



In the Machine Shop



Rayon Laboratory Unit

In the Metallurgical Laboratory

will analyze present conditions by studying trends and comparing with other states which have become industrialized; and will suggest the proper direction for Virginia's future industrial expansion.

These are some of the ways in which the Virginia Polytechnic Institute is serving the state in the remarkable industrial expansion it is at present experiencing. The value of the work of this institution is becoming more and

more widely recognized by industrial and commercial interests. As new needs arise in the industrial development of Virginia, this college has faith that additional means for serving such needs will be made available.

\$10,000,000 FOR HOUSTON PROJECTS

Funds Available Include \$6,800,000 Bonds Authorized

Houston, Tex.—According to a financial report released by City Comptroller H. A. Giles, this city has \$10,162,000 available for public improvements, including \$6,800,000 of bonds authorized but not sold; \$2,875,532 in cash from various bond funds, and \$487,238 appropriated to various projects but not spent. Bonds not sold include: Drainage, \$750,000; sanitary sewers, \$1,000,000; streets, \$1,000,000; parks, \$200,000; waterworks, \$1,000,000; bridges, \$600,000; city hall, \$900,000, with \$100,000 in cash; macadam paving, \$200,000; fire and police stations, \$100,000; White Oak drive, \$50,000, from a total of \$200,000 voted, the remainder having been sold and ready for immediate use; charity hospital, \$1,000,000, the county also having \$500,000 bonds on this project which will be a city-county institution.

Production of Asbestos in 1929

Total quantity of asbestos sold or used by producers in the United States in 1929 was 3155 short tons valued at \$351,004, according to the United States Bureau of Mines. These figures represent 1983 short tons of chrysotile valued at \$317,584, mined in Arizona and Vermont and 1172 tons of amphibole valued at \$33,420, mined in Georgia, Maryland,

Montana and North Carolina. As compared with 1928, figures for chrysotile showed an increase in quantity but a decrease in value, while amphibole increased both in quantity and value.

Imports of unmanufactured asbestos for consumption amounted in 1929 to 262,427 short tons, valued at \$11,153,017, divided as follows: Crude 16,976 tons; mill fiber 95,384 tons; refuse 150,067 tons. Corresponding total figures for 1928 were 230,595 short tons, valued at \$9,017,891. Exports in 1929 were 709 short tons of crude, valued at \$105,467.

Carrying Power Across Mississippi River

Baton Rouge, La.—The Baton Rouge Electric Co. has been granted authority by the Federal Government to erect a 66,000-volt transmission line over the Mississippi River here on two 425-foot towers, as a part of a line now nearing completion by the Stone & Webster Engineering Corp., Boston. The line will transmit power from the new Louisiana station of Louisiana Steam Products, Inc., a constituent company of the Engineers Public Service Company, across the river to the system of the Baton Rouge Electric Co. and to the Gulf States Utilities Co. The permit was granted with the provision that the wires clear high water at a minimum height of 150 feet and that the towers be painted black and white and also be brightly illuminated that they may not be a menace to navigation.

\$3,500,000 INVESTMENT IN BARGE LINE EQUIPMENT

St. Louis Company Plans to Have Fleet of Barges, Tow Boats and Terminals Ready for Service in August

The Mississippi Valley Barge Line Co., a \$3,500,000 organization of St. Louis, is now making preparations for operating a weekly river express service between Cincinnati, Ohio, and New Orleans, La. A total investment of \$3,000,000 is being made in towboats, barges and terminals, all of which are to be completed and ready for use by August.

Two 2000-horsepower towboats to be equipped with Westinghouse steam turbines are now being built at Charleston, W. Va. Two other towboats of the same horsepower, but to be driven by Skinner uniflow engines, are under construction at the Pittsburgh plant of the Dravo Contracting Co. All four boats will have Babcock & Wilcox boilers. Of the fifty 300-ton, cargo box type barges now in the process of construction, 30 are being built by the Dravo company and 20 by the McClintic-Marshall Co., Pittsburgh. A new type of terminal costing \$500,000 is being erected at Cincinnati, with elevator equipment in the main terminal building.

L. W. Childress, St. Louis, is president of the barge line company, and Carl J. Baer, of the same city is vice-president.

The Fluctuating Price of Lead and Zinc

Development of New Uses to Increase Demand Should Be a Major Aim of the Industry

By

H. A. KNIGHT,
Larchmont, N. Y.

AT the present moment zinc ore sells in the "tri-State" district, centering in Joplin, Mo., at \$33 per ton, the lowest since June, 1922, when the average price for that month was \$32.03 per ton. At the same time lead ore changes hands at \$62.50 per ton, again the lowest since 1921, the average price for that year having been \$51.59 per ton.

In other words, prices of these ores hark back to the post-war depression of 1921 and 1922 and profits of the mine owners and ore operators are small, if not nil. The owners of mine properties call it hard times and perhaps are inclined to believe they have been singled out by evil fortune. Perhaps they fail to realize, however, that many commodity prices are the lowest in years.

It so happens that some ten to fifteen basic commodities are the lowest in price since those very years of 1921 and 1922. One commodity, sugar, recently went to the lowest price levels since 1870 at least, previous to which year price records were not kept. Prices of several of the refined metals are lowest since those years, among which may be mentioned finished steel, slab zinc, pig lead, pig tin, silver, platinum, aluminum, nickel and quicksilver.

Other commodities which have struck low ground for the past eight or nine years are rubber, cotton, grain, coffee, cocoa, silk. It would be too complex, even if possible, to analyze the reasons for these depreciating commodity values. The stock market crash of last fall may have been one reason; overproduction generally is another; inability of foreign nations to buy freely of American commodities is another. In fact, general deflation of values has been an important cause.

But the subject under discussion now is the matter of prices of zinc and lead ores. Since the war the price of zinc ore has fluctuated between \$20.57 per ton as the average price for September, 1921, to \$82.83 as the average for March, 1927. The yearly prices of lead ore have changed from \$46.03 per ton as an average for the entire year of 1914 to \$116.14, the average for 1925.

The law of supply and demand applies to prices of these ores the same as in other commodities. There have been but few artificial means of holding up prices in these ores, as for instance the Stevenson plan for rubber, the Coffee Defense Institute for Brazilian coffee, the Cuban Co-operative Selling Agency in sugar and Copper Exporters, Inc., in the cop-

per market. However during the last several months a central selling agency for disposal of lead and zinc ores has been formed, but the membership has not been sufficiently all-inclusive to make stabilization of prices effective. In fact, Copper Exporters, Inc., who controlled 90 to 95 per cent of the world's copper production, recently had to drop prices from 18.30c, where they had been held a year, to 13.30c prevailing today.

So lead and zinc ores still for the most part follow the laws of supply and demand. However there has been a metallurgical development which has proved a detriment to the mines of the tri-State district. This has been the development of the electrolytic zinc process over the past five years, which tends to make obsolete the older methods of production. The output of electrolytic zinc in the United States in 1921 was 11,559 tons and in 1928 was 160,160 tons, out of the total production of 651,247 tons that year. Electrolytic zinc is made by electricity, as the name of the process might imply. The metallic zinc deposits on the cathode of the furnace when a current passes through the molten metal. The older method is that of distillation. The electrolytic process has made much further progress in copper than in zinc, as the great bulk of the red metal is now refined by the electrolytic method.

Now it happens that the electrolytic zinc plants are far removed geographically from the tri-State district. The Anaconda Copper Mining Co. turned out 108,263 tons in 1928 at Great Falls, Mont., and 50,039 tons more at Anaconda, Mont. There are other active plants in Idaho and British Columbia, with more under construction, including one in the tri-State district at East St. Louis, Ill. At any rate demand for the tri-State zinc ore has suffered somewhat from the increasing output of electrolytic zinc in Far Western sections of the United States and Canada.

In many commodities the price of the finished goods depends on costs of the raw material, but in the case of lead and zinc ores the prices are generally set by quotations of the more finished materials, pig lead and slab zinc.

One of the principal producers of pig lead, it is quite generally known, pays for its lead ore at prices which are

based on the selling price of pig lead and it is sometimes suspected that it gladly sells its pig lead at lower prices so that it may buy in its ore at cheaper prices.

When zinc ore in the tri-State district dropped recently from the price of \$35 to \$33 per ton, the metal trade journals gave as the reason the low selling price of prime western slab zinc, a price which was lowest since 1922. In fact, declines in zinc ore prices are invariably attributed to drops in values of the smelted product.

In turn, prices of the refined metals depend entirely on the old law of supply and demand. Thus when stocks of slab zinc in the United States were 92,408 tons in July, 1921, the highest on record (until this spring) the price of prime western slab zinc averaged 4.19c per pound, East St. Louis, in August of that year, the lowest since the war. When stocks of slab zinc were only 6922 tons in November, 1925, the price of zinc was 8.72c per pound as an average for the month, the highest price in at least eleven years. Similar examples could be shown in prices of pig lead with reference to available supplies.

Now the copper producers tried to ignore this law of supply and demand. At the time that surplus stocks of copper were becoming the largest since 1921, they were holding prices at 18 cents per pound, a level considerably higher than the average price over a period of years. However, after the price had been held at this artificial level for a full year, the price structure crashed like the proverbial house of cards. At the middle of April copper was still at 18c; by the end of the month sales were made at 12 cents.

It would appear that the best solution of the problem of the lead and zinc ore producers—and the smelters and refiners of those metals as well—would be the establishment of some sort of institute or association to study new uses for these metals and to advertise them before the public. Such an effective program has been carried on by the Copper and Brass Research Association. After the war the home costing \$10,000 to \$15,000 contained, in thousands of cases, brass plumbing, copper screens, gutters, downspouts, flashings and hardware, luxuries formerly confined to the \$40,000 house, largely because of the advertising campaign of this copper research association.

There is not only competition among

unrelated commodities, such as between lumber and steel, but severe competition among items of the same general family—the metals, for instance. The nickel-trimmed automobile of yesterday is the chromium-plated one of today; the building trimmed with copper yesterday is decorated with stainless steel today; locomotive boiler tubes were of steel instead of copper when the latter metal was selling at 18 cents per pound.

Thus the advantages of lead and zinc must be studied further, new uses developed and the world told about them. Then the demand will keep up with the supply and prices will be profitable.

Purchase of National Forest Lands in South Approved

Of the 422,737 acres of forest land approved for purchase by the National Forest Reservation Commission at its recent special meeting, 240,000 acres involving a purchase price of \$840,013 are located in the states of Alabama, Arkansas, Florida, Georgia, Louisiana, North Carolina, South Carolina, Tennessee, Virginia and West Virginia. The areas acquired will be administered by the Forest Service of the Department of Agriculture with a view to development of their full use in watershed protection, timber growing and in other ways to serve public requirements.

At the same meeting the Commission approved establishment also of new Federal purchase units in four states—the Cumberland Unit located in 12 east central counties of Kentucky; the Kiamichi Unit in Le Flore and Latimer counties, Oklahoma, and Polk County, Arkansas; the Homochitto Unit in six counties in Southwestern Mississippi, and the Evangeline Unit in Rapides Parish, Louisiana. With exception of Louisiana, none of these states now contain National Forest purchase units. Representatives of the Forest Service will be assigned to each new area to conduct negotiations with land owners.

\$1,100,000 Wharf for New Orleans

New Orleans, La.—Plans are being prepared by the engineering department of the Board of Port Commissioners for a new Bienville street wharf to cost \$1,100,000, the structure to consist of a steel substructure on concrete foundations and a steel single story shed with concrete floors. The shed will be enclosed with sheet metal siding and steel doors, while there will be some ornamental stucco work at the upstream end of the wharf. General contract will be handled by the Board and bids invited within 30 days on the foundations.

Georgia Keeps 85 Per Cent of Its College Graduates

By MARY WYLIE JONES, Secretary, Division on Information,

Georgia College Placement Office, Atlanta.

Formerly men went to college to study for one of the professions, or perhaps for the cultural background that a college education gives, but today business demands trained minds—minds trained scientifically, commercially, technically. The requisite is for organized thought that can be applied to everyday affairs.

To bring together the business man and his need and the college man and his training is the object of the Georgia College Placement Office, not just any man for any job, but the right man for the right job. Women, too, are finding openings hitherto undreamed of in woman's sphere. Increased registrations of women graduates with the Placement Office this year indicates a marked change in the inclination of Georgia women toward business.

The Georgia organization stands alone in that it seeks to place graduates of all schools of the state and that its board is composed of an equal number from college and business. Not only is the office seeking to fit graduates to suitable positions, but it seeks to place them in such positions in Georgia, for the upbuilding of their own state. For years the state has spent millions of dollars educating its young men and women only to watch 50 per cent of them each year go outside the state. Today 85 per cent of Georgia's graduates locate within the state and the Placement Office has been active in bringing this about.

Six years ago, Cator Woolford, prominent Atlanta business man who employs hundreds of college men and women in his own organization, the Retail Credit Company, located in Atlanta, became concerned over so many graduates leaving the state, and organized and for two years personally financed the Georgia College Placement Office. Through this organization and by employing hundreds of college men in his own business, and through efforts in "selling" the college man to other business men, he has done much toward drawing the college and industry together.

"At first a college man is worth no more to an employer than a man without college training," says Mr. Woolford, "but when he has learned a business, with the added ability and background gained in college he becomes an asset and in nearly all instances he will outstrip a man of lesser advantages."

The Placement Office issues a bulletin,

listing qualifications of applicants—training, character, experience, standing, personality, appearance, inclination. The abstract bears the number, not the name of the prospective employee. This information is secured by visiting colleges during February and March and registering the students, who state their personal qualifications on a printed form. The college contact officers, from the faculty and from the student body, then furnish an unbiased estimate of the student. Qualifications are listed and the bulletin is mailed to approved firms whose needs, working conditions and possibilities of advancement have been investigated, and who in turn file their orders with the office.

Employment agencies of various sorts are no new thing, but this is the only organization that serves the entire state without cost to employer or employee. It is made possible by the colleges themselves and by public spirited individuals who have great faith in the possibilities of the college graduates and who realize Georgia's own need of its college men and women.

The Placement Office is bringing about a closer coordination between study and career and is meeting the problem of the emigration of the college graduate, a problem that is disturbingly prevalent over the entire South.

\$1,500,000 Elevator Addition

Houston, Tex.—Foundation has been completed for one unit of a \$1,500,000 addition to the Houston elevator for the Port Commission and construction of walls has been started. Excavation has been completed for the second unit and pile driving is in progress for the working house. General contract for the extension was awarded some time ago to the Folwell Engineering Co., Chicago, and to the Laclede Steel Co., St. Louis, for 1400 tons of reinforcing steel. Subcontracts for machinery and materials have been awarded as follows:

Cement—Atlas Portland Cement Co. of Texas, Waco; Lone Star Cement Co. and the Trinity Cement Co., both of Houston

Spouting—Material Handling Equipment Co., Chicago

Reinforcing bars, motors, rubber belts and hardware—Peden Iron & Steel Co., Houston

Car dumper and silent chain drives—Link-Belt Co., Chicago

Machinery—Webster Manufacturing Co., Chicago.

Plans were prepared by John S. Metcalf Co., Chicago.

Southern Men and Capital Helped to Build Western Railroads

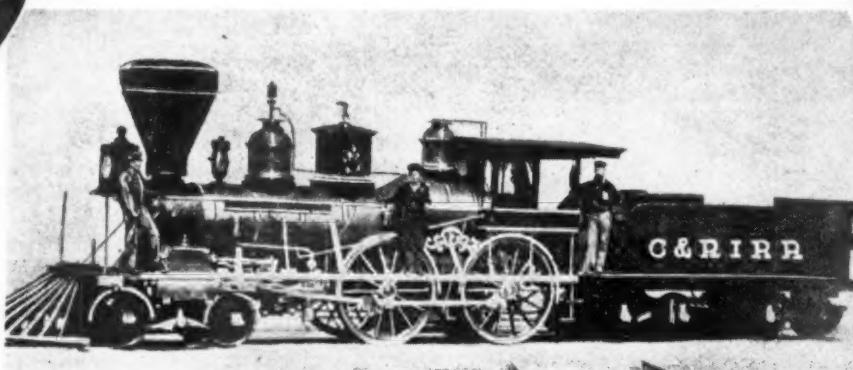
Sheffield Scientific School of Yale the Creation of a Southern-made Fortune.



Henry Farnam



Joseph E. Sheffield



Photographs Courtesy Rock Island Lines

WHEN one delves into the part Southerners, Southern capital and Southern influence have played in the development of the country he wonders what the nation would have done or would do without the region below the Mason-Dixon line. Go where you will, peer beneath the surface of this or that great project which had or has to do with the progress of the United States, and almost invariably one finds a pronounced Southern tinge somewhere. The influence of the South in the development of the country is akin to the influence of North Carolina in the development of the South. Contact with leading figures anywhere below the Mason-Dixon line will disclose in about three instances out of five that if they are not natives of North Carolina, one of their parents, grandparents or great-grandparents was.

How many today are aware that the first railroad to enter Chicago was built with Southern capital by a Mobile cotton operator who grew up in Newbern, N. C.? How many know that the same individual, with money produced in the cotton fields of the South, financed and constructed the beginning of what is now the great Chicago, Rock Island & Pacific Railway system, a railroad which has had and is having a tremendous influence in the development of that portion of the country between the Mississippi and the Rockies and from the Lakes to the Gulf? Carrying it still further, how many know that cotton-field money made possible the Sheffield Scientific School at Yale?

The story of Southern influence occasionally crops up in unexpected quarters. It is a far cry from Chicago's first railroad and the Sheffield School to the widely heralded "slow train through Arkansas," yet it was search for the mythical Arkansas creeper that turned up Joseph E. Sheffield and his story.

By
DUDLEY V. HADDOCK,
Arkansas State Chamber of Commerce,
Little Rock.

The railroads were appealed to for information and the Cotton Belt inquired if there was anything slow about the Lone Star Limited. The Missouri Pacific countered with the statement that even the air mail could not compete with its Sunshine Special or The Texan, and the Frisco said if there is anything pertaining to the snail about the Kansas City-Florida Special or The Sunnyland no one has yet been able to discover it.

The Rock Island offered the Choctaw Limited and a few more as proof that the slow train had disappeared, so far as it was concerned, and added that it had always kept pace with the South because it is a Southern line, as Southern as the Atlantic Coast Line, the Seaboard Air Line, the Southern Railway, Nashville, Chattanooga & St. Louis, Central of Georgia or the Louisville & Nashville. The assertion that it is of the South was something to be looked into and the slow train was forgotten. Delving into the records disclosed that the Rock Island not only is Southern to the bone, but that in connection with its birth Southern capital made it possible for Chicago to abandon prairie schooners as a means of land transportation.

Joseph E. Sheffield was born in Southport, Conn., June 19, 1793, but despite his eastern nativity, he became a Southerner as pronounced as though born in New Orleans. In 1808, when only 15 years of age, he wandered to Newbern, N. C., to begin his career as a clerk in

a mercantile house. There he first encountered cotton in the fields and there he absorbed that something in the atmosphere of North Carolina which, through those who have

become imbued with it, has made itself felt in every state in the Union. In 1813 young Sheffield became a partner in a New York mercantile venture but continued to make headquarters in Newbern, from which point he traveled extensively over the South. Two years later he moved to Mobile and thereafter, for 20 years, was a resident of that city, and one of the greatest cotton merchants of the time. Because of ill health Mr. Sheffield returned to the East in 1835 and with a large fortune, for those days, established himself in New Haven and became interested in transportation ventures. For 15 years, associated with Henry Farnam, an engineer, Mr. Sheffield devoted his activities to the canals and railroads in Connecticut. He became heavily interested in the Farmington Canal and was one of the most active figures in the movement to obtain a charter for the New York & New Haven Railroad.

It was in 1851 that Sheffield and Farnam became interested in the possibility of railroad transportation in the Chicago district. That year they entered into a contract with the newly chartered Chicago & Rock Island Railroad to construct its line from Chicago to Rock Island, Ill., on the Mississippi River, a distance of approximately 182 miles. It was a \$5,000,000 job which they were forced to finance themselves, for they were to be paid for their work in stocks and bonds as construction progressed.

Sheffield and Farnam had an important obstacle to overcome at the outset. There was no railroad into Chicago from the East over which they might move railway material. The Michigan South-

ern & Northern Indiana had attempted to build into Chicago some time previously, but funds became exhausted and the line was completed only as far as Hillsdale, 177 miles east of the city. This company had approached Sheffield and Farnam in December, 1850, with a proposal that they extend it to Chicago. This they declined to do but after thoroughly investigating the Chicago & Rock Island project the following spring and realizing the necessity of a line for bringing in the material they needed for its construction, they approached the Michigan Southern & Northern Indiana and offered to provide the capital to complete it. They found Southern capital for the project, construction was resumed, and the rails reached Englewood in March, 1852. Chicago, therefore, is indebted to Southern capital for its first railroad from the East.

With a line over which to move material to Chicago, Sheffield and Farnam launched construction of the Chicago & Rock Island. Fifteen months later, in June, 1854, with President Fillmore and a large gathering of the notables of the nation aboard, a train was operated from Chicago to the Mississippi river. The road was formally delivered to the company July 1, 1854, fully equipped and without one dollar of floating debt.

Immediately thereafter Sheffield and Farnam set about bridging the river. They obtained a charter, Sheffield raised the money and Farnam drew the plans and built the structure, the first bridge across the Mississippi, and in 1856 had

the honor of driving the first locomotive across it, the "Antoine Le Claire." Farnam became the first president of the Rock Island, serving in that capacity several years, then declined reelection and took a vacation in Europe. Upon his return to this country he became associated with Dr. Thomas Clark Durant and built the Mississippi & Missouri Railroad from the Mississippi to the Missouri river, Mr. Sheffield meantime having been forced to retire because of a recurrence of ill health.

In these days the financing, construction and equipment of a railroad of 182 miles would be a comparatively trivial undertaking but in the Fifties it was a tremendous project. Sheffield was the financial and Farnam the engineering genius of the two-man combination.

"Mr. Farnam assumed the sole engineering responsibility for the construction of the road," Sheffield wrote in 1878, "and was furnished by me with the cash to promptly pay every subcontractor on the 10th of every month; over 25,000 tons of foreign rails were imported, five and twenty American locomotives and a large supply of cars all were paid for on delivery."

Sheffield, one of the most remarkable men of his time, died at New Haven, February 16, 1882, at the age of 89. "Not only was Mr. Sheffield an extraordinary man, but the times in which he lived were prolific of great things," says Prof. Henry W. Farnam, Professor Emeritus of Economics at Yale and son of

Sheffield's co-worker. "His life of four score and nine years stretched from George Washington to President Arthur. It ran through three great wars. It witnessed the Louisiana purchase, the Dred Scott decision, the Proclamation of Emancipation. Mr. Sheffield was a boy of 14 when Fulton tried out his first steamboat, the Clermont, on the Hudson. He lived to see steamers cross the ocean and locomotives the continent, while the electric telegraph sent its messages under the sea and around the world.

"Of these events he was no indifferent spectator. He bore a leading part in the development, first of the South and then of the West. Though not a college graduate he exercised a powerful influence upon education through the Sheffield Scientific School of Yale, which his generosity founded."

That Mr. Sheffield was a native of Connecticut means nothing. He was a Southerner in every sense of the word, a fact to which his voluminous files of correspondence testify. His boyhood was spent in North Carolina and at 22 years of age he moved to Mobile, there remaining 20 years and accumulating the business experience and the fortune which later meant so much to Connecticut and to Chicago. His many vigorous letters upholding the opinions formed during his residence in the South, written after his return North, are ample evidence that he was a Southerner. Whether North Carolina or Alabama should claim him is something else.

Interest Quickens in Texas Quicksilver Industry

By GEOFFREY E. GOVIER, San Antonio.

West Texas is watching the Emmet mercury boiler experiments with unusual interest. If this invention proves a commercial success, development of quicksilver mining will receive a tremendous impetus, and the industry here is in a position to greatly extend its operations. The cinnabar resources of this territory are large, the ore having been found over an area covering about 600 square miles.

Production of quicksilver in West Texas has been steady since 1900, principal output having come from the Chisos and the Mariposa mines in the Terlingua district of Brewster county. Recently, additional mines, known as the Study Butte, Thirty-nine, and the Waldron have been opened and are now producing important quantities. The town of Alpine is the nearest railroad

point to the Terlingua mining district, which is 70 miles south. This area is locally known as the Big Bend country owing to the great sweep that the Rio Grande makes around the mountains.

Very good cinnabar prospects are said to be found at the north end of Mariscal mountain, and there are two other good prospects in the Christmas mountains.

The quicksilver is produced at the mines. The cinnabar ore (sulphide) is heated in a free supply of air, resulting in distillation of the mercury, which is condensed. The sulphur burns to sulphur dioxide.

Texas and California are close rivals for first place in quicksilver production. Since 1922 no output statistics for the Texas mines have been issued by the United States Bureau of Mines, for the

customary reason that when only two or three companies are operating, release of figures reveals private operations. During the period 1899-1922 the production from the Texas mines averaged about 4200 flasks annually; a flask is 75 pounds. Since the opening of the three new mines the output is doubtless considerably greater.

Regardless of the outcome of the Emmet mercury boiler experiments the production of quicksilver in Texas will probably increase very substantially during the next few years. The price of mercury is relatively high, and some of the principal deposits in other countries are nearing exhaustion.

\$750,000 Reformatory Planned

Jefferson City, Mo.—The State Department of Penal Institutions has commissioned William B. Ittner, St. Louis, as architect for a \$750,000 reformatory to be located about six miles from Jefferson City. Details of the project have not been announced.

What a Cotton Mill Did for One Tenant Farmer

By RICHARD WOODS EDMONDS.

THIS is a true story of what a cotton mill did for one Southern farm tenant and his family; and in order to make it more convincing, all names and places are given and photographs included.

Eleven years ago Arb Dodd was a tenant farmer in Talladega County, Alabama. He lived in the cabin shown in one of the accompanying pictures. Its interior may be guessed from its outside appearance. In that lonely cabin in the hills lived Mr. Dodd, his wife and their three children. The hopeless bleakness

to go to town and get himself a job. The Dodds have shown that they are steady, earnest people with none of the drifter in them, and before they determined upon so radical a change in their mode of life there must have been some anxious cogitations. Probably very little was said, however; poverty, hardship and isolation are not factors that breed loquacity, and the Southern back-woodsman is notably taciturn; little of the mental struggle shows on the surface.

At any rate, the move was decided upon. According to Donald Comer, who

then 8 years of age; Nellie, 7; and Dee, 4; all too young to walk the full distance; all taking turns riding in their parents' arms.

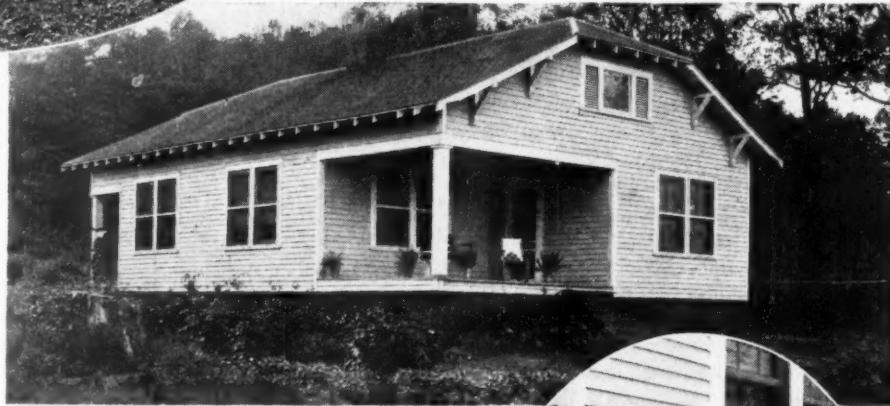
The road wound down out of the hills and brought the Dodds to Sycamore, a station on the Louisville & Nashville Railroad. There Mr. Dodd found a cotton mill, and a job and there he and his family have stayed to this day.

The conveniences that the Dodds found in their mill village cottage must have seemed astonishing luxuries; the regular wages provided a better living than they had ever known before; the school for the two older children, and the kindergarten for Dee, not only relieved Mrs. Dodd of much responsibility but provided educations they could not have had in the hills.

Eleven years have passed since the Dodds arrived at Sycamore. Melvin, oldest of the children, was graduated from the local school and is taking a correspondence course in carding and spinning. "On account of his initiative and ambitions," says Mr. Comer, in telling the story, "he was selected to go



This Modern Home of the Dodd Family in the Mill Village at Sycamore, Alabama, Offers a Striking Contrast to Their Former Lonely Cabin in the Hills of Talladega County.



of existence in such an isolated, back-woods cabin can be remotely imagined only if one has come into close contact with the people who live in them and has seen the hardships of their lives. It is a bleakness that has crushed the heart out of many a good man and woman. Incidentally, many thousands have been rescued—but that is anticipating.

Arb Dodd had in him some of that divine discontent that demands something better of life; and some of the driving power that expresses that discontent in action. But seeing no opportunity for improving his condition on that isolated little farm, he determined

tells the story in the Avondale Sun, when the Dodds came to move, they packed all their belongings in one battered suit case. A neighbor hitched up an old wagon and drove them to the foot of Blue Mountain. The railroad was over the mountain, eleven miles away. Mr. and Mrs. Dodd and the three children set out afoot for a different world. In Mr. Dodd's pocket was the family fortune of \$2; in his arms, a suitcase and a child. At his side trudged a woman also carrying a child, at least a part of the way—a woman who looked to him for all that she and her babies could expect from the world; and with them walked the third child, Melvin.



The Dodd Family Today

with that group which Avondale sends each summer to the foremanship training courses sponsored by the University of Alabama at the university, and under Professors Harris and McKinley." At the age of nineteen, he is already an assistant foreman in the carding department. He is a member of the band, the basket ball and base ball teams. In a word, Melvin is making the most of educational opportunities his father never had.

Nellie, the second child, graduated at the local school and married early. Her husband is an assistant foreman in the spinning department. Dee is fifteen and is therefore still in school.

A large part of the South is still sparsely populated. Distances between farms are often very great, and from many farms to schools, greater still. Markets for farm produce are inadequate, while the production credit system holds the tenant farmers in poverty. Some parts of the section are wholly unsuited to farming. The people who have been left on such land since slavery days have had no alternative except the cotton mills; and in the mills they and their children have had—and still do have—better living conditions and better educational advantages than they could possibly have on their farms. The cotton mills, with their easy jobs, have taken in thousands and tens of thousands of men and women too untrained to do any other factory work. They have not only provided better livings and brighter futures for those in the mills, but by creating a farm-produce consuming class have helped to raise the living standards of those remaining on the farms.

From the younger generations, educated in mill villages, has come a great stream of men and women into the business life of the South outside the mills. Like Melvin Dodd, many a young man, given a better education than his father could get, has gone up in mill work. Many another has gone out into the more skilled trades, into mercantile or other lines.

The process is going steadily forward today. Thousands of families on tiny, impoverished farms, in the less fertile sections of the South, are awaiting opportunities to get away from the land and into a mill. Mature men and women, coming untrained to cotton mill work, are not likely ever to go beyond it; but the younger generation can and does—or the most capable and ambitious of them do so. The surplus of labor in the South is immense, and competition for jobs is keen. Slow down the process of industrialization by which jobs are being provided for the growing numbers of trained workers, and the classes that will suffer are those still on the farm

and those youngsters trained in mill schools for more exacting jobs than cotton mill work, but who are unable to find the jobs they need. And just such a slowing down process may be the result of the proposed campaign to organize labor in the South. For the two groups that will feel it most, it will be a tragedy.

\$600,000 Steel Mill Equipment

Weirton, W. Va.—Contracts have been awarded by the Weirton Steel Co. to the General Electric Co., Schenectady, N. Y., and the Westinghouse Electric and Manufacturing Co., East Pittsburgh, Pa., for motor equipment for the new rail and structural mill here, which is expected to be in operation by the last of the year. These contracts involve about \$600,000, while the completed mill will represent an expenditure of approximately \$3,500,000.

\$750,000 Courthouse Planned

Clarksburg, W. Va.—Architects have been invited by the Harrison County Court and its advisory committee to file qualifications and plans for a \$750,000 courthouse to be erected here. Funds have been raised by special tax levies laid during the last three years.

Bids on \$2,000,000 Hospital

New Orleans, La.—Bids will be opened June 24 in the office of Jas. A. Wetmore, Acting Supervising Architect of the Treasury Department, Washington, to erect new buildings for the Marine Hospital here, at an estimated cost of \$2,000,000. The main building will be 5 stories, to contain 600 beds, with a 3-story administration building, 4-story surgical ward, laundry, power plant, garage, refrigeration plant, officers' quarters, nurses' quarters, storage building and workshops. Corridors will connect the hospital, administration building and mess hall.

Hardy Strawberry in North Carolina

A hardy type of strawberry known as the "Blackmore," developed on the North Carolina State test farm at Willard, near Wilmington, N. C., is steadily gaining favor with the berry growers of the country. Up to this time 536,385 plants, or enough to cover a fifth of the berry acreage in the United States, have been distributed. Among outstanding features of the new berry are its firmness and the fact that it stands up well in shipping; it holds its bright color several days after picking and has an acid flavor which gives promise in canning.



Making Way for \$1,000,000 Baltimore School Addition

Potts & Callahan, Baltimore contractors, are using a Marlon steam shovel equipped with a 1½-yard dipper in excavating for a large addition to the Baltimore Polytechnic Institute. White trucks are used for hauling. Improvements include a three-story structure to be erected between existing wings which will be connected with the center section by corridors. A one-story auditorium will also be erected. Potts & Callahan are now wrecking the existing center section of the school. J. Henry Miller, Inc., Baltimore, is general contractor and Charles M. Anderson, architect.

Illiteracy's Effect Upon Industry

Probably 5,000,000 Persons in the United States Who Can Neither Read Nor Write

By

LEE LAMAR ROBINSON,
Washington, D. C.

THE extent of illiteracy throughout the United States, despite progress being made in many directions, is of more vital concern possibly to industry than to any other one interest. This is the opinion of Mrs. Cora Wilson Stewart, director of the National Illiteracy Crusade.

In view of her long experience in dealing with those who lack even the most elementary education, Mrs. Stewart had been asked by the writer to discuss the relation of this circumstance to the economic present and future of the country. After reciting steps leading up to the mechanics of the movement of which she is now the directing head, and the development of information showing there are at least 5,000,000 out of the total population of the United States who can neither read nor write, Mrs. Stewart said:

"Fortunately the national conscience is becoming aroused, due to disclosures growing out of research made by the National Illiteracy Crusade. Men of affairs, in our industrial as well as in our commercial and financial life, are showing keen interest in the situation, with a real desire to aid in solving the problem. It must be remembered that it is not alone these 5,000,000 unfortunates scattered over the various states of the Union whose plight makes up this particular problem, but also the multiplying millions of those whose education is of the most limited character, assuming some literacy on their part.

"What might it mean to manufacturers, wholesalers, retailers; to all those interested in the distribution of manufactures turned out daily by our various factories, if these 5,000,000 illiterates, or even an appreciable portion of that number were able to read even though somewhat laboriously.

"The toll taken by unemployment enters into the picture. More and more the need for knowledge of the English language is necessary in connection with operation of the almost human mechanical equipment of the present day. Ability of the operators of these machines, or even of those occupying humble positions as helpers around these machines to read, spells protection for their own lives, for the lives of others and for the property of their employers. The positions are few indeed in which the ability to read at least a few words is not an essential.

"The motor age emphasizes this point. Traffic regulations must be understood,

warning signs read at intersections and rail crossings. The driver of the delivery truck as well as the chauffeur of the imposing private car is lost unless he is able to read and write well enough to sign a receipt or deliver a message. In fact, many avenues of employment are closed to those who can neither read nor write. Thus, not only is the individual deprived of means of making a fair livelihood, but his ability to purchase commodities is decreased proportionately.

"Some insurance companies, I am told, refuse to issue policies to illiterates. In one instance an insurance agent found a prospect anxious to take out a policy but unable to sign his name to the application. The company held that the policy could not be issued. With customary initiative, however, the agent taught the applicant to write his name legibly and the policy later was issued.

"By way of contrast, I made a study of a certain county in which the percentage of literacy was high and found the banks in that county carried deposits gratifyingly high, economic conditions of the locality being taken into consideration. In a county where illiteracy was widespread, I found just the opposite situation as to bank deposits.

"Due to the reticence which seems naturally to accompany illiteracy, according to salesmen for industrial concerns they find the ignorant hard to deal with. They resist new things, are suspicious and clannish, and to use an expression of a traveling salesman he finds himself usually 'up against a stone wall,' whenever he comes in contact with an illiterate."

Mrs. Stewart turned to the brighter side of the picture, and expressed the belief that continued interest on the part of those supporting the work of the National Illiteracy Crusade would bring gratifying results.

Brought to national attention by her pioneering work with the now famous "moonlight" schools of Kentucky which she founded, to which old men and old women came eagerly but timidly, oftentimes accompanied by grandchildren, and seeking instruction in the rudiments of the English language, Mrs. Stewart now occupies a unique place in the educational world. Following the successful establishment of the moonlight

schools, she was called on to lecture on her work before various bodies throughout the country. When the National Illiteracy Crusade was established, she was the natural and logical one to take over its executive direction.

It was at the instance of President Hoover that the National Advisory Committee on Illiteracy, to cooperate with the National Illiteracy Crusade was formed. Mrs. Stewart also is chairman of the executive committee of this advisory body of which Secretary of Interior Wilbur is general chairman. President Hoover is continuing his keen interest in the work of the two organizations and is one of the chief sources of reliance for Mrs. Stewart in her efforts to carry out the comprehensive program on which the joint organizations are engaged.

Some time ago in an address in the South Mrs. Stewart expressed the thought that each period in the world's history can be characterized by one word, and cited the word "power" as expressive of the Napoleonic era. "I think the present era will go down in history as the era of education," she said. In that same address she emphasized the extent to which illiteracy contributes to the criminality of the country, statistics showing that the prevalence of crime among illiterates is seven times as great as among those who have had some schooling.

While the prevalence of illiteracy in the South is concededly deplorable, yet other sections, some in the Northwest, are finding illiteracy so extensive as to cause energetic response to the activities of the crusade. In the Middle West, the Southwest, in the East a like story is developed wherever Mrs. Stewart and her associates are active.

The crusade is carried on with cooperation of state boards of education, local school authorities, civic associations, religious bodies, commercial organizations and individuals. In some states such progress has been made as to cause other states to inaugurate rival campaigns, in an effort to equal or exceed accomplishments of workers across the state line.

In a word, the leaven is working. As the efforts of the crusaders reach out of the way communities and the opportunities afforded for learning to write are becoming known, there is no lack of interest on the part of those it is sought to help. The alphabet first is taught, then in succession the words, one at a time, "I can read and write."



General View of Plant for Precooling Celery at Sanford, Fla.

Precooling of Vegetables as a Fundamental Factor in Profitable Marketing

By

ROBERT L. CORNELL,
Orlando, Fla.

TWO plants for precooling and processing celery were completed last year in Florida, the culmination of six years of development work initiated at Sanford in 1923. It is said these plants comprise the only process of its kind in the country, as well as including the largest water cooling outfit of which the manufacturers of the equipment have any record. The subject of preparing

tion at Sanford, that to be commercially profitable a plant should permit processing on a volume basis with as little hand labor as possible. In order to assure complete precooling of each package a continuous conveyor was designed,

equipped with metal containers into which each crate or box was loaded separately. This made it possible completely to submerge the product to be cooled and made uniform circulation of the cooling water for every unit. There were six of these conveyors, arranged abreast each other and traveling at a speed of 1½ feet a minute beneath a shower of refrigerated water, a distance of 45 feet, or for an elapsed time of 30 minutes. The entire cooling and conveyor apparatus was installed in an insulated enclosure.

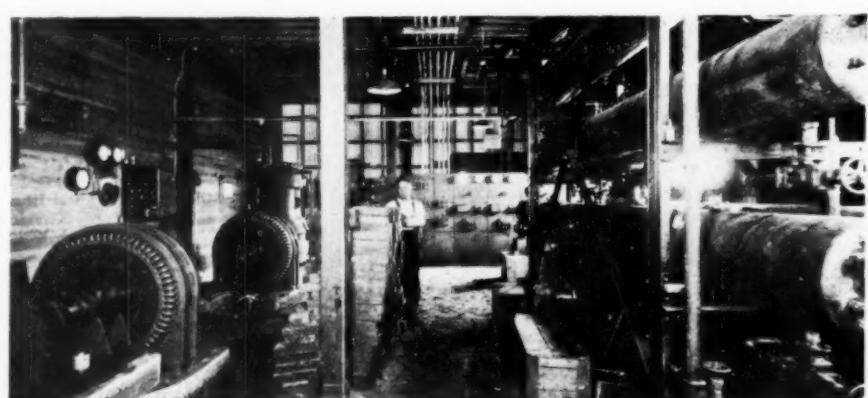
This original plant operated with considerable success after the experimental stage had been passed, and from 500 to 1000 cars of celery each season were precooled and sent to market, until the plant was destroyed by fire in the summer of 1928. During the period of operation it was found possible to effect a saving of \$20 to \$30 per car in refrigerating charges, and the markets actually preferred the precooled product and in many cases paid a better price for produce that arrived clean, well



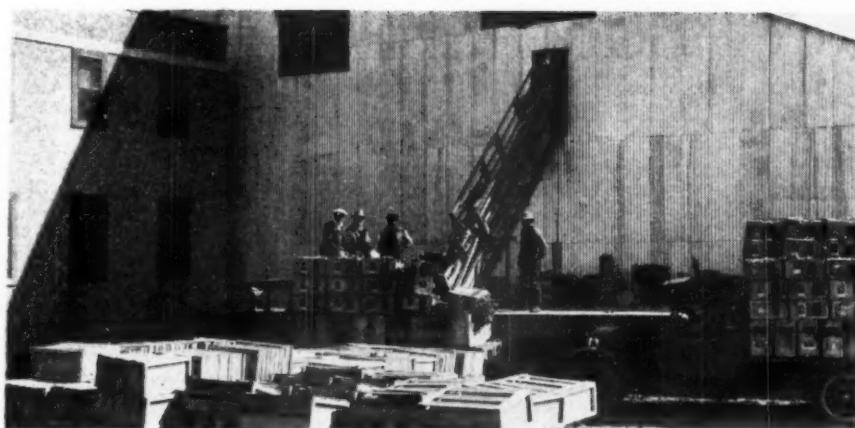
Celery Coming Out of Precooler Buckets Ready to Go on Cars.

fruits and vegetables before shipment so they will arrive in the best possible condition and ready for local distribution without further preparation is one of ever increasing interest to growers, shippers, buyers, retailers and the public in general. Hence, the following discussion.

In 1923 a study was made of the possibilities of washing and precooling celery and other vegetables with a view to improving the carrying qualities of the produce and saving in transit the icing charges between point of origin and the markets. It was the opinion of growers and marketing agencies, as well as engineers engaged in the investiga-



Compressor Room at Sanford Plant.

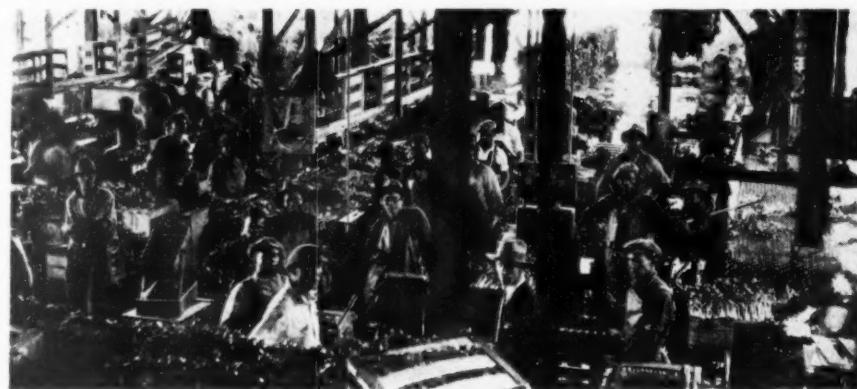


Elevating the Celery to Washer on Second Floor.

packed and in a first class state of preservation.

Last year two improved plants of this type were completed by the Dutton Celery Precooling Co., one at Sanford and one at Oviedo, Fla. The Sanford plant has a capacity of 40 cars and the Oviedo plant 20 cars per day of 24 hours. Direct connected electric motors operate all units. Three distinct processes of washing and packing are performed in addition to precooling. All handling and washing, with exception of the celery brought in from the field in loose form for packing at the plant, is done by power driven mechanical conveyors and apparatus. As the precooled package comes out of buckets at the discharge end of the precooling machine it passes directly to refrigerator cars, via a conveyor running through an insulated tunnel along the loading tracks, so that little time is lost or refrigeration given up by the product in passing from precooler to the cars.

Precooling is accomplished by circulating water at the rate of 2000 gallons a minute over Baudelot type refrigerating coils placed above the bucket conveyors. The cooled water falls immediately on the produce passing below, fills the



Washing and Stripping Belts Where Celery Is Graded and Hand Picked.

buckets and keeps them constantly overflowing throughout their entire travel, thus making positive and uniform for each package the carrying away of the heat of the produce. The water is picked up again from the insulated, reinforced concrete tank which extends under the entire precooling chamber, and is recirculated over the coils. It is cooled to as near 32 degrees as possible without forming ice and the produce is cooled to a temperature of 33 to 35 degrees.

In addition to water circulated in the

precooling process, 1800 gallons a minute are used in various washing operations. Water is taken direct from a battery of flowing wells and is distributed and circulated by means of high pressure, direct motor driven, centrifugal pumps. From results of a survey made last season covering 36 marketing cities of the country, including an area from New Orleans to Toronto and west as far as Omaha, and serving a population of 22,250,000 people, it would appear that 78.6 per cent of the trade expressed a preference for precooled celery as turned out by these plants.

Both the Sanford and Oviedo plants were designed and constructed under supervision of the writer as consulting

engineer. Principal materials and equipment were supplied by the following firms:

Structural steel—Ingalls Iron Works Co., Birmingham, Ala.

Refrigerating equipment—York Ice Machine Co., York, Pa.

Motors, switchboards, electrical materials, etc.—General Electric Co., Schenectady, N. Y., and Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa.

Centrifugal pumps—Worthington Pump & Machinery Corp., New York.

Conveyors and elevators—Jeffrey Manufacturing Co., Columbus, Ohio.

Insulation—Cork Import Co., New York.

Industrial flooring—Florida Asphalt Block Co., Tampa, Fla.

Building supplies—Security Lumber Co., Sanford, Fla.



Celery Is Received From the Field in Steel Wire Baskets for Washing and Packing at the Plant.

Miniatures of Southern Cities

Port Arthur, Texas



Photo by Southwest Air Service, Houston

By HARVE H. HAINES, Port Arthur Chamber of Commerce and Shipping.

PORT ARTHUR has an estimated population of 53,402. Located at this city is the plant of the Gulf Refining Co., the largest single oil refinery in the world. The company has its own fleet of ocean going steamers and employs over 6000 men.

During 1929 Port Arthur completed two ten-story hotels and a \$450,000 hospital. Preparations were also begun for construction of a \$2,000,000 seawall, which will be completed this year.

Building permits for 1929 totaled \$2,702,352.

Ashland, Kentucky



By C. J. NEEKAMP, Ashland Chamber of Commerce.

ASHLAND, which has a population of 36,000, is primarily an industrial city. At present there are 30 active industrial corporations employing over 7500 workers who receive an annual payroll in excess of \$28,000,000.

From a transportation standpoint, Ashland is strategically and advantageously located in the northeast corner of Kentucky and serves as a junction for several large motor coach lines. By actual count 83 motor coaches enter and depart from the two terminals daily. Interurban traction is furnished to neighboring cities, and the city is located on the main line of the Chesapeake & Ohio Railroad. The largest individual terminal yard in the United States is operated by

this railroad about five miles from Ashland. Low cost water transportation is afforded by the Ohio River.

Development of the city's public utilities has kept pace with the impressive growth of the city's industries. A modern waterworks system and filtration plant furnishes 100 per cent pure water the year round. Because of its proximity to unfathomable deposits of natural gas, Ashland's industrial consumers receive natural gas for 25 cents and domestic consumers for 31 cents per 1000 cubic feet. About 50,000,000 cubic feet of this gas is produced daily within the city's corporate units. Electric power facilities are available at reasonable rates.

The city boasts five theaters, two fully equipped hospitals, churches of all denominations, and an outstanding public school system.

Labor conditions are very satisfactory in this community. An outstanding favorable factor is that 98 per cent of the people are native born and practically 80 per cent are home owners.

Lynchburg, Virginia



Underwood & Underwood, N. Y.

By ROBERT D. RAMSEY, Chamber of Commerce.

NO changes have been made in this city's area since annexation in 1926, the area remaining at 8947 acres. Population is given by the 1930 census as 40,559.

Lynchburg is the outstanding shoe manufacturing center of the South. The Craddock-Terry Co., operating locally five plants with over 3000 employees, is not only the largest shoe manufacturing concern in the South, but ranks fourth in the country. Located here also is the John H. Heald Co., makers of tanning extract, the plant being the largest of its kind in the world. During the past year a huge paper mill was built in connection with the Heald plant; the pulp of the chestnut bark from which tanning extract is made is used as the base for making the paper.

Lynchburg possesses two large pipe and foundry companies and is recognized as a leader in the pipe industry in the South, excelled only by Birmingham and Knoxville. The Thornhill Wagon Works is understood to be the largest wagon plant in the South. C. B. Fleet Co., drug manufacturers, are the only makers of phospho soda in the country.

Included in the local garment making industry are three overall plants and one pants plant, altogether giving employment to 1800 workers.

The shoe industry leads the city's industrial life, with foundries ranking second and garment making third. Annual value of manufactured products is about \$45,000,000.

Lynchburg is classed as a strictly American Plan Open Shop community.

During 1929 approximately \$1,200,000 was expended for new building construction.

Most significant of the city's undertakings in 1929 was the exchange effected between the city and the Federal Government, whereby the present Federal building will be occupied by the city for administrative purposes and a new Federal building will be erected on the site of the present city hall. Another important undertaking was construction of the municipal airport.

Parkersburg, West Virginia



By GEORGE A. COOPER, Parkersburg Board of Commerce.

PARKERSBURG, located at the junction of the Ohio and Little Kanawha rivers, has an estimated population of 33,417, a gain of 13,360 over the 1920 figure. South Parkersburg, separated from the city proper by the Little Kanawha, has a population of 8000 and Vienna, a community adjoining the city's northern limits, has about 6000. Population is 98 per cent native born, according to the 1920 census.

One of the largest rayon manufacturing plants in the country is located in Parkersburg. It now employs nearly 3000 workers and has under construction a new unit, which, when completed, will employ an additional 3000. The only Vitrolite plant in the United States is also located in the city, the product of this plant being used all over the world.

Other industries are the Parkersburg Iron & Steel Co., producers of galvanized and black sheet steel; the Baldwin Tool Works, an independent shovel plant; Porcelain Products, Inc., making electrical porcelain; Parkersburg Rig & Reel Co., producers of oil well derricks, rigs and reels; a large oil refinery; a spool silk plant; a plant producing milk bottles and another turning out metal lath.

Wood County, of which Parkersburg is the seat, is a leading agricultural section of the state, dairy products and live stock being a major activity. Parkersburg is the home of one of three plants in the United States marketing poultry and eggs of standardized quality under inspection of the U. S. Department of Agriculture.

During 1929 building permits amounted to \$1,122,286. Some of the buildings planned for this year, contracts for which will be let within 60 days, include a post office, a \$300,000 hospital and a \$500,000 theatre. Parkersburg's estimated annual payroll is \$11,500,000. Banks resources are \$25,000,000.

The most significant activity of the city in 1929 was completion of the new municipal water system.

Lubbock, Texas



By A. B. DAVIS, Lubbock Chamber of Commerce.

LESS than 10 years ago Lubbock, now recognized as "The Hub of the Plains," had only 4051 people. Today the 1930 census shows a population total of 20,612. The basis of growth of this section is agriculture, cotton grain sorghums, wheat and other products being grown on the millions of acres of level, fertile lands at a minimum expense. With this advance in agriculture there has developed a number of agricultural industries, including three creameries making butter, four feed plants grinding grain sorghums and other feeds, four chicken hatcheries and three poultry packing plants.

Lubbock is serving as a wholesale, retail and commercial center, with a total of 168 wholesale and jobbing concerns.

Very recently Lubbock was designated as the first place in the South to have a district office of the American Cotton Cooperative Association, a unit of the Federal Farm Board. This office will handle the business of cooperative marketing in 65 West Texas counties. In addition to this cotton office the city has a cotton oil mill, two cotton compresses, eight cotton gins, three cotton exchanges and approximately 150 cotton firms and buyers.

During the past several months business conditions have been above normal. So far this year, Lubbock is ranking seventh among cities of Texas from the standpoint of construction projects under way. In 1929 building permits totaled \$3,337,305, or double the total for 1927. Public improvements cost \$3,049,000.

Located in Lubbock is the Texas Technological College, a school a little over five years old that ranks third in enrollment in the entire state. The Lubbock poultry and egg plant is the largest poultry packing plant in the Southwest. The Burrus Elevators have a capacity of 500,000 bushels, a 750,000-bushel capacity addition being under construction. This plant is one of the largest in the Southwest.

Sumter, South Carolina



Photo by 4th Photo Section, Air Corps, Maxwell Field, Montgomery, Ala.

By R. B. WATERS, Board of Trade.

PRELIMINARY reports of the 1930 census place Sumter's population at 11,723, an increase of 23 per cent over the 9508 figure shown by the 1920 count. Sumter has an average annual temperature of 63 degrees; is located near the geo-

graphic center of South Carolina in Sumter County, which leads the state in hard-surfaced road construction, and is served by four railroads. The city's industries are chiefly furniture factories and woodworking plants.

Outstanding developments in 1929 were: Opening of the plant of the Williams Furniture Corp., a \$300,000 furniture manufacturing organization completely financed by local capital, and the starting of operations by the Brooklyn Cooperage

Co., said to have the largest plant of its kind in the United States. This latter company owns sufficient timber to operate for 35 years.

Last year the Municipal Government set on foot a plan, which when executed will involve a \$30,000 expenditure and will reduce the city's insurance rate.

Building permits issued during 1929 totaled \$459,683. Sumter is strictly American Plan Open Shop.

Construction Progressing on \$16,000,000 Canal

600-Mile Intracoastal Waterway to Extend From New Orleans to Corpus Christi

Houston, Tex.—In a bulletin recently issued to the officers, directors, subscribers and members of the Intracoastal Canal Association of Louisiana and Texas relative to the construction already accomplished, under way and contemplated for the intracoastal canal from New Orleans, La., to Corpus Christi, Tex., a distance of 600 miles, Roy Miller, active vice-president of the Association, with headquarters in this city, states that good progress is being made on two sections under contract in Louisiana—from the Vermilion to the Mermentau, a distance of 45.3 miles, and from the Mermentau to the Calcasieu, a distance of 36.5 miles—with nine dredges at work. Completion is expected within 16 or 18 months.

Rights-of-way are said to have been secured on that portion of the Morgan City-Vermilion River section in Louisiana from Weeks Bayou to the Vermilion River, 38 miles, and bids for construction will be invited at once. A stretch of 28 miles from Morgan City to the Vermilion will only be left to insure the completion of the canal via the Plaquemine route to the Texas line. Completion is expected within two years. The canal will follow existing natural waterways for a considerable portion of the distance from Morgan City to Weeks Bayou, and a change in the route in St. Mary Parish will straighten the canal and shorten it about 4 miles. Rights-of-way are being secured and the section will soon be awarded.

With the section from Weeks Bayou to the Vermilion under contract, 120 miles of the canal in Louisiana will be under construction. No work is necessary from Calcasieu to Port Arthur since the canal will follow an existing 30-foot channel, approximately 50 miles. Construction will soon be started on the section between Port Arthur and Galveston. Specifications for the work in Jefferson and Chambers counties have been approved by the Chief of Engineers and the district engineer will soon ask bids. Rights-of-way are being se-

cured along Bolivar Peninsula in Galveston county and construction may also be commenced soon at the Galveston end of the section.

Rights-of-way are being obtained on the section from New Orleans to Morgan City, known as the Harvey route, while conveyances have been completed in Jefferson and Lafourche parishes. The situation in Terrebonne Parish has been simplified by a promise of the Governor of Louisiana of state aid for building bridges and securing rights-of-way. Business interests of New Orleans are also cooperating. The commissioners' court of Galveston county agreed to secure rights-of-way through the county to the Brazoria county line and a committee is at work in Brazoria county to hasten completion of the work from Galveston to the Brazos River, which has been designated as an independent section and upon which work may begin as soon as rights-of-way are secured, a distance of 45.7 miles.

Work is being pushed to obtain rights-of-way on section 8 through Brazoria and Matagorda counties to Portsmouth or Palacios Point on Matagorda Bay, 61.9 miles, while on section 9, from Portsmouth or Palacios Point to Corpus Christi, 96.1 miles, practically no problems of that nature are involved, as the canal will follow the shallow waters of the various bays along the north shore and will be constructed in such a way as to provide a practically land-locked waterway for a large part of the distance.

A preliminary report analyzing tonnage figures and showing the probable saving in freight charges which would accrue to the Rio Grande Valley by the extension of the canal from Corpus Christi to the Rio Grande is now being studied by the district engineer at Galveston, with a view to building this extension also. Out of a special appropriation of \$12,000,000 for waterways, contained in a Deficiency Bill recently passed by Congress, the Chief of Engineers made an additional allotment of \$1,850,000 for construction on the canal,

thus assuring ample funds as various contracts are awarded.

The original Act of Congress authorizing the construction of the canal provided for a 9-foot depth and a 100-foot bottom width. It is estimated that the cost of the project will exceed \$16,000,000 and will be completed in less than three years.

\$16,000,000 BALTIMORE LOANS

City to Vote on \$10,000,000 Port Fund

By action of the Port Development Commission, Baltimore, the city will vote in November on a \$10,000,000 allotment of a \$50,000,000 harbor improvement loan authorized by the Legislature. It is pointed out that unless this allotment is authorized by the voters, the Commission will be without funds to continue harbor improvements, as all but \$1,500,000 of the last \$10,000,000 apportionment was expended for the McComas street terminal for the Western Maryland Railway Company. Voters will also pass on an act of the Legislature enlarging the powers of the Commission by enabling it to enter into contracts with industrial firms and transportation companies for erecting buildings or plants on the waterfront. City Solicitor A. Walter Kraus will prepare ordinances submitting the proposals and present them to the city council before the summer adjournment. Other city loans to be voted on in November include a \$2,500,000 additional airport loan, \$2,000,000 for paving and bridges and \$1,500,000 to erect a school building for handicapped children.

\$750,000 Doctors' Building

Atlanta, Ga.—General contract has been awarded to the Southern Ferro-Concrete Co., Atlanta, to erect the new \$750,000 W. W. Orr Doctors' Building at Peachtree and Pine streets for the Marlborough Company, owned by the Orr estate. The building will be of reinforced concrete, brick, steel and tile, with stone trim and built-up roof. There will be a 1-story section for stores, a garage in the rear. Pringle & Smith, Atlanta, are the architects.

The Iron Industry in 1929

Steel Ingot Production Largest—Pig Iron Second and Iron Ore Third Largest Output on Record

The year 1929 in the iron and steel industry was one of large production and increased earnings, according to the United States Bureau of Mines. Production of steel ingots in 1929 reached a new peak, exceeding the previous record year 1928 by about 8.5 per cent. Increased needs of the steel industry were naturally reflected in outputs of pig iron and ferro-alloys, the production of pig iron reaching a peak total of 41,761,488 gross tons, a gain of 5 per cent over the previous record made in 1928, and ferro-alloys reaching 869,563 gross tons, the second largest output on record. Although not keeping pace with the outputs of steel and pig iron, production of iron ore was the third largest on record, for the third time in history the output exceeding 73,000,000 tons.

Iron Ore

Iron ore mined in the United States in 1929 amounted to 73,027,720 gross tons, an increase of 17 per cent as com-

IRON ORE MINED IN UNITED STATES, 1928-1929.

(Exclusive of ore containing 5 per cent or more of manganese.)

| State | 1928 | 1929 |
|----------------|------------|------------|
| Alabama | 6,307,844 | 6,453,075 |
| California | 52,713 | 303 |
| Colorado | 52,713 | 50,754 |
| Georgia | 73,052 | 59,316 |
| Michigan | 13,676,984 | 15,456,397 |
| Minnesota | 37,564,005 | 45,760,858 |
| Missouri | 94,899 | 168,934 |
| Montana | 1,640 | 100 |
| Nevada | 250,332 | 281,327 |
| New Jersey | 184,623 | 171,585 |
| New Mexico | 712,757 | 822,261 |
| North Carolina | 30,675 | 30,675 |
| Pennsylvania | 1,023,870 | 1,092,013 |
| Tennessee | 128,928 | 102,171 |
| Utah | 320,655 | 324,885 |
| Virginia | 27,902 | 5,018 |
| Washington | 1,012 | 1,012 |
| Wisconsin | 1,284,592 | 1,608,571 |
| Wyoming | 491,280 | 639,477 |
| | 62,197,088 | 73,027,720 |

Pig Iron

Production of pig iron in 1929, exclusive of ferro-alloys, was 41,761,488 gross tons, compared with 37,410,897 tons in 1928. Thus, the production in 1929 was 12 per cent more than in 1928, and it was 17 per cent more than the average

for the preceding five years. In production of pig iron in 1929 there were used 72,330,926 gross tons of domestic iron ore and manganeseiferous iron ore; 2,887,814 tons of foreign iron ore and manganeseiferous iron ore; and 6,817,314 tons of cinder, scale, and scrap; a total of 82,036,054 tons. An average of 1.964 gross tons of metalliferous materials was consumed per ton of pig iron made in 1929, as compared with 1.937 tons in 1928.

Shipments of pig iron from blast furnaces in 1929, amounting to 41,549,161 gross tons, valued at \$731,858,075, showed an increase of 8 per cent in quantity and 11 per cent in total value. General average value of pig iron of all grades at the furnaces in 1929 was \$17.61 a ton, as compared with \$17.27 in 1928.

Pig iron shipments from Southern blast furnaces amounted to 4,805,728 tons valued at \$45,613,148 as compared with 4,534,120 tons valued at \$45,361,645 for 1928.

Ferro-alloys

Shipments of ferro-alloys of all classes in 1929 amounted to 829,324 gross tons, valued at \$75,506,078, an increase of 4 per cent in quantity and 13 per cent in total value. Production of ferro-alloys in 1929 was 869,563 gross tons, as compared with 757,131 tons in 1928, an increase of 15 per cent.

Production of ferromanganese in 1929 was 339,205 gross tons, containing about 269,000 tons of manganese (metal), an average of about 79.3 per cent of manganese. In production of ferromanganese in 1929 there were used 614,763 gross tons of foreign manganese ore, 46,385 tons of foreign ferruginous ore, 27,558 tons of domestic manganese ore, 1350 tons of iron ore, and 7811 tons of cinder, scale, and scrap. The quantity

IRON ORE SHIPPED FROM MINES IN UNITED STATES, 1928-1929.

(Exclusive of ore containing 5 per cent or more of manganese and of ore sold for paint.)

| State | 1928 | | 1929 | |
|----------------|------------|---------------|------------|---------------|
| | Gross tons | Value | Gross tons | Value |
| Alabama | 6,159,863 | \$11,599,176 | 6,637,299 | \$12,575,113 |
| Colorado | 52,713 | (a) | 50,754 | (a) |
| Georgia | 73,052 | 209,877 | 59,316 | 175,145 |
| Michigan | 14,241,102 | 37,039,644 | 16,838,568 | 47,597,976 |
| Minnesota | 38,129,018 | 94,258,899 | 46,470,243 | 121,776,312 |
| Missouri | 94,899 | 377,847 | 171,456 | 661,055 |
| Montana | 1,640 | 5,900 | 1,640 | 1,640 |
| New Jersey | 350,616 | 1,357,877 | 285,115 | 1,157,848 |
| New Mexico | 184,623 | (a) | 171,585 | (a) |
| New York | 767,743 | 2,906,055 | 875,564 | 3,941,985 |
| North Carolina | 30,675 | 30,675 | 30,575 | 106,411 |
| Pennsylvania | 1,013,791 | 2,411,114 | 1,151,130 | 2,382,839 |
| Tennessee | 128,478 | 286,524 | 101,796 | 234,827 |
| Utah | 320,655 | (a) | 324,885 | (a) |
| Virginia | 27,970 | 83,114 | 232 | 631 |
| Washington | 1,012 | (a) | 5,018 | (a) |
| Wisconsin | 1,394,371 | 3,700,797 | 1,789,721 | 4,848,978 |
| Wyoming | 491,280 | (a) | 639,477 | (a) |
| Undistributed | ..... | b1,551,833 | ..... | b1,689,520 |
| | 63,432,826 | \$155,788,657 | 75,602,734 | \$197,148,640 |

a Included under "Undistributed."

b This figure includes value for States entered as "(a)" above.

pared with 1928. Compared with the average for the preceding five years the production in 1929 is greater by 19 per cent. Shipments of iron ore in 1929 amounted to 75,602,734 gross tons; valued at \$197,148,640, an increase of 19 per cent in quantity and of 27 per cent in total value, as compared with 1928. Stocks of iron ore at mines at the end of 1929 amounted to 7,067,206 gross tons, a decrease of 23 per cent.

Iron ore mined in the South amounted to more than 6,814,000 tons in 1929 as compared with 6,632,625 tons in 1928. Shipments of iron ore from the South amounted to 7,000,674 tons valued at \$13,753,182 as compared with 6,484,262 tons valued at \$12,556,538 in 1928.

PIG IRON SHIPPED FROM BLAST FURNACES IN THE UNITED STATES, 1928-1929.

BY STATES.

| State | 1928 | | 1929 | |
|---------------|------------|---------------|------------|---------------|
| | Gross tons | Value | Gross tons | Value |
| Alabama | 2,525,812 | \$42,194,935 | 2,697,814 | \$43,674,910 |
| Colorado | (a) | (a) | (a) | (a) |
| Illinois | 4,094,514 | 73,524,773 | 4,316,096 | 79,672,295 |
| Indiana | 3,842,762 | 63,622,330 | 4,279,825 | 71,416,732 |
| Kentucky | 225,545 | (a) | 194,150 | (a) |
| Maryland | 971,832 | (a) | 1,111,219 | (a) |
| Massachusetts | (a) | (a) | (a) | (a) |
| Michigan | 797,776 | 15,157,535 | 841,089 | 14,099,647 |
| Minnesota | 341,203 | (a) | 376,551 | (a) |
| New Jersey | 2,369,814 | 39,928,960 | 2,626,771 | 46,960,186 |
| Ohio | 9,266,936 | 156,883,186 | 9,446,984 | 163,480,003 |
| Pennsylvania | 12,289,455 | 216,425,084 | 14,058,194 | 257,154,601 |
| Tennessee | 102,718 | 1,920,901 | 104,985 | 1,938,238 |
| Utah | 164,071 | (a) | (a) | (a) |
| Virginia | 63,175 | 1,245,809 | 44,512 | (a) |
| West Virginia | 645,038 | (a) | 653,048 | (a) |
| Wisconsin | (a) | (a) | 204 | (a) |
| Undistributed | b603,048 | b50,447,757 | b797,719 | b53,461,463 |
| | 38,303,609 | \$661,351,270 | 41,540,161 | \$731,858,075 |

a Included under "Undistributed."

b Includes figures for States entered as "(a)" above.

of manganese ore used per ton of ferromanganese made in 1929 was 1.894 tons; in 1928 it was 1.891 tons; and in 1927 it was 2 tons. Of the foreign manganese ore used in 1929, Russia supplied 267,600 gross tons; Brazil, 228,737 tons; India, 86,547 tons; Africa, 28,592 tons; Cuba, 2050 tons; Chile, 1187 tons; and Turkey, 50 tons. The quantity of domestic manganese ore used in manufacture of ferromanganese in 1929 represented 4.3 per cent of the total manganese ore used, as compared with 6.3 per cent in 1928.

Production of ferrotungsten in 1929 was 3101 gross tons, containing 5,389.937 pounds of tungsten (metal), an average of 77.59 per cent of tungsten. Shipments of ferrotungsten in 1929, amounting to 3049 tons, contained 5,302.435 pounds of tungsten, and the average value per pound of contained tungsten was \$1.10 f. o. b. furnaces, compared with 93 cents in 1928.

Production of ferrovanadium in 1929 was 1823 gross tons, containing 1,540.912 pounds of vanadium (metal), an average of 37.74 per cent of vanadium. Shipments of ferrovanadium in 1929,

amounting to 1,767 tons, contained 1,494.291 pounds of vanadium, and the average value per pound of contained vanadium was \$3.12 f. o. b. furnaces, compared with \$3.20 in 1928.

Building Owners and Managers to Meet

Biloxi, Miss.—The twenty-third annual convention of the National Association of Building Owners and Managers will be held here from June 9 to June 13. J. G. Morgan, New York, is chairman of the entertainment committee and T. H. Lynch, New Orleans, is co-chairman. The president will present his report at the opening session of the convention. Four sessions will be devoted to operating methods and new devices; three sessions to various aspects of renting, and the closing session to committee reports. E. B. Murray, Kansas City, Mo., is chairman of the operating methods and devices committee and C. M. Turley, St. Louis, is chairman of a committee in charge of reports, discussions, etc.

Cellulose Industries May Use Peanut Hulls

Peanut hulls, now regarded as a Southern farm waste, with a value of only about \$2 a ton for fuel, may become commercially important as a source of cellulose to supplement cotton linters and wood pulp in America's rapidly developing cellulose industries, say D. F. J. Lynch and M. J. Goss, chemists of the Department of Agriculture's Bureau of Chemistry and Soils, who have been seeking to discover and develop profitable outlets for this farm waste of the Southern states.

Several attempts to dispose of the 70,000 tons of peanut hulls which collect annually at the shelling plants in the South have as yet met with only small success. The search for a supplemental cellulose supply naturally turns to cheap farm waste products. Peanut hulls, because of cheapness and availability in large quantities at shelling plants, appear to offer a promising source of cellulose for the future.

Shell Petroleum Refinery in Louisiana

The Norco Refinery operated at Sellers, La., by the Shell Petroleum Corp., St. Louis, has grown in recent years from a comparatively small plant to one of the most important units of the Shell organization. The corporation's main asphalt plant is located at this modern refinery, and in keeping with the expansion program there were completed in 1929 four cracking units, two topping units, wharf facilities and an office building containing dance hall,

club rooms, library, and hospital for employees.

Two main sections make up the plant: one has seven topping units, the other has eight Dubbs cracking units. All machinery in these process units, as well as equipment operated in connection with the rest of the refinery, is of the most modern type, and buildings are so laid out as to secure the greatest possible efficiency in production of gasoline. New wharf facilities permit three

ocean liners to be docked at one time.

The Norco plant is one of five large refineries of the Shell corporation, three being located in the South. Other plants include one recently completed at Houston, Texas, and plants at Arkansas City, Ark., Wood River, Ill., and East Chicago, Ind. For making quick trips between these various operations and headquarters at St. Louis the Shell officials are using a tri-motored Fokker monoplane, the "Gold Shell."



View of Norco Plant Facilities of the Shell Corporation at Sellers, Louisiana.

Some Major Projects of the Week

Under the Construction Department elsewhere in this issue will be found a complete list of the week's activity in the South and Southwest, including hundreds of industrial, mining, power, transportation, building construction, and financial projects. It presents a panorama of development requiring materials, equipment and machinery of almost every description.

\$5,000,000 BUILDING PRO- JECTED

St. Louis Interests Plan Big Merchandise Mart

St. Louis, Mo.—The Terminal Railroad Association, Henry Miller, president, has applied to the Board of Public Service for authority to build railroad tracks across Poplar street between Twelfth boulevard and Thirteenth street, to serve a new \$5,000,000 merchandise mart building which the association plans to erect on the block at the southwest corner of Twelfth boulevard and Spruce street. The structure will be 16 stories and provide space for warehouse, mart, exhibition, and offices. It will be operated by the St. Louis Mart, Inc., in which Lawrence H. Whiting, Harold M. Bixby, Lon W. Harlow, Col. Harry Sculkin, E. L. Stanciliff, Hiram C. Martin, Thomas Glancy and Charles E. Richardson are interested. Walter J. Knight & Co., St. Louis, are the engineers.

\$300,000,000 WASHINGTON IMPROVEMENT PROGRAM

Building and Beautification Project to be Completed in Ten Years

Washington, D. C.—A report prepared by Perry K. Heath, Assistant Secretary of the Treasury, dealing with legislation and appropriation bills for Washington's beautification and building program, indicates that improvements costing more than \$300,000,000 will be completed within the next eight or ten years. These figures do not include municipal projects coming under the supervision of the Board of Commissioners of the District of Columbia. Major projects in the program include 11 government buildings to be erected over a 10-year period, \$190,000,000; improvements on Capitol Hill, including a Supreme Court building, enlargement of the Senate office building and the enlargement and landscaping of the capitol grounds, \$26,000,000; parks, highways and boulevards under the National Park and Planning Commission, including the \$14,750,000 Arlington Memorial Bridge, \$43,750,000; extension of Potomac, Rock Creek and Stream Valley parks, \$24,500,000; civic center for municipal

buildings, with land, between \$31,000,000 and \$36,000,000.

Mr. Heath reports that the \$10,000,000 Internal Revenue Building is nearing completion and that the Department of Commerce Building is about 50 per cent complete, while foundations for the Postoffice Department Building will be started in December and ground broken the same month for the Justice Building, General Accounting Building and Labor Building. Construction is expected to start early next year on the Archives Building and on an addition to the Agricultural Department Building. As these structures near completion, buildings will be started for the Interstate Commerce Commission, the Coast Guard and independent units, War Department, Navy Department and the Bureau of Public Health.

\$2,000,000 Veterans' Home

Washington, D. C.—The establishment of a \$2,000,000 branch in the South of the National Home for Disabled Volunteer Soldiers is provided in a Senate bill approved by the House Military Committee.

\$1,500,000 Telephone Building Unit

Louisville, Ky.—General contract to erect the first unit of a \$5,000,000 dial building here for the Southern Bell Telephone Co., Atlanta, Ga., has been awarded to the Barge-Thompson Co., Atlanta. This unit will be 10 stories and basement, 122 by 147 feet, with foundation for 19 stories, and will cost about \$1,500,000. Marye, Alger & Vionour, Atlanta, are the architects.

10-Story Apartment Building

The Buena Vista Apartment Corp., Baltimore, has purchased a site at the southeast corner of Charles and Thirty-third streets, for a 10-story apartment building, to be known as The Chalfonte. It will be 65 by 152 feet and will contain 70 apartments, ranging from one room and bath to five rooms and bath. The project will cost about \$650,000. Frank Russell White is the architect and the White Construction Co., builders, both Baltimore.

\$1,200,000 Power Project Under Way

Appalachian Electric Power Company Enlarging James River Plant

Reusens, Va.—Preliminary construction has been started by the Appalachian Electric Power Co., Roanoke, Va., on modernizing and enlarging its hydroelectric power plant on the James River here, to cost approximately \$1,200,000.

The enlargement program calls for the installing of additional generators, which will practically treble the capacity of the plant, and the removal of approximately five feet from the level of the present dam and the installation of 15-foot steel gates of automatic control and operation. The gates will be supported on concrete piers to be built against the downstream face of the dam and set at regular intervals across the river. By raising the normal pond level 9 feet, the storage capacity of the dam will be largely increased. The level of the river

will be raised to within three feet of the right-of-way of the railroad and a riprap arrangement of levees and concrete abutments built to protect the railroad property. Water will be backed up a distance of four miles by the increased height of the dam but despite the increased pond level, the steel gates will not allow the water to rise as high as it does at present, as it will be possible to lower the gates five feet below the present crest of the dam in case of emergency, thus providing a greater spillway during periods of high water.

Both plant buildings now at Reusens will be used and a third building erected to house the new equipment. Five machines will be replaced by new ones. Transformers of 132,000-volt capacities will be replaced by larger ones and practically all switching equipment will be rebuilt. The company plans to handle construction with its own forces.

LETTERS FROM OUR READERS

Discusses Centralized Control of Federal Construction and Maintenance Work

The J. E. Greiner Company,
Consulting Engineers
Baltimore, Md.

Editor Manufacturers Record:

Late last fall the attention of readers of the MANUFACTURERS RECORD was drawn to the important question of the advisability of adding a Department of Public Works and Maintenance to the Government of the United States, which department would be charged with the coordination and handling of all engineering work undertaken by the Government. It is proposed that this department should be headed by the ablest private engineering talent in America, whose tenure of office should not exceed four years.

This is a very big and vitally important question and a proper answer to it can be made only after very careful and thorough consideration of the advantages and disadvantages of the present manner in which Government engineering and construction work is now administered; and a comparison drawn between the results of the present method and a reasonable anticipation of the results of placing all this work in the hands of a central bureau. It seems very doubtful that efficiency or economy would result from attempting to handle the many enormous engineering and construction enterprises of the Government—differing widely in character, spread over a tremendous area, and affecting people of highly diverse interests—by a large central bureau. Furthermore, if such a bureau were justifiable, it seems certain that it would be a mistake to place its administration in the hands of even the ablest of engineers if tenure of office is limited to four years. There should be continuity of administration of important engineering work. The preliminary development stages alone of many important projects require more than four years. It would undoubtedly be exceedingly unwise to be frequently changing administrative heads. As an example, it is safe to say that none of the important railroad companies of the country would consider changing chief engineers every four years.

It would be much better to leave the administration of national engineering projects as at present, with each department handling the work with which it is by long experience and tradition familiar. No doubt these departments are capable within themselves of increasing their own efficiency as time goes on. Any of them have available at their call the ablest specialized engineering talent in the country as provided by outstanding and nationally known firms of consulting engineers practicing in every field of engineering endeavor. It would certainly be more efficient and economical to employ them when needed on specific projects than to build a top-heavy central bureau that would probably be subject to a highly variable volume of work without possessing the ability to rapidly

expand or contract its forces in proportion thereto.

For the general good of all concerned it is extremely desirable to keep politics out of engineering matters. The Corps of Engineers, United States Army, has been admirably successful in accomplishing this. No doubt the Navy and other departments handling engineering work have been equally as successful. It is very doubtful that a central bureau headed by a four-year appointee would be successful in so doing.

WILSON T. BALLARD, Vice-President

Group Price-Fixing Wrong in Principle

Farmers Union Warehouse Co.
Anniston, Ala.

Editor Manufacturers Record:

We had the pleasure of reading W. L. Clayton's article "What Price Cotton?" and note he is planning to issue another "What Congress Can Do for the Cotton Farmers."

The cotton farmers need honest, intelligent leadership. Mr. Clayton has both honesty and intelligence and we believe he can be induced by such men as you to assume this leadership and lead the farmers out of the wilderness. We learn through press reports that he declined an indirect offer of \$100,000 annually to assume management of the American Cotton Growers Cooperative Association. We think he acted wisely, for we believe it is founded on the wrong principle.

About eight years ago, when the so-called cotton co-ops were organized, Henry Ford published a series of articles showing why they would of necessity fail. You will recall these articles as being the basis of Aaron Shapiro's million-dollar law suit which was finally compromised.

The principle of group price-fixing is wrong.

The only way to control any kind of production is through price; or the only right way is through price.

P. M. EICHELBERGER.

Would Trade Farm Products for Foreign Goods

Florence, S. C.

Editor Manufacturers Record:

The farmer is in a mood which will permit him to aggressively espouse almost anything reasonable which offers relief. The Farm Board can't give relief. No agency in the world can artificially boost prices so long as there is a surplus, and it's going to be mighty hard to get the farmer to assist in reducing this surplus as long as artificial methods of relief are held before him.

In my opinion there are only two ways to give the farmer relief. One is by selling the surplus or trading it and

the other is by curtailment in production. I sadly state that, unless God intervenes, the latter might just as well be dismissed for the present, probably for two years or more.

This leaves the first. I can imagine but few things we could exchange our wheat, cotton, etc., for except wine and beer. The idea of getting Congress to adopt a plan of this kind might seem fantastic.

That there is little hope for relief for the masses until agriculture stages a recovery I think is generally admitted. We might as well face the fact, that the fight for relief will require time and patience, but it's a tremendous thing and worthy of the assistance of all forward-looking people.

ASHTON H. WILLIAMS.

Arkansas Profits From Building Up Local Industries

Arkansas State Chamber of Commerce
Little Rock, Ark.

Editor Manufacturers Record:

We have observed considerable comment in business and trade publications with reference to industrial development practices of the Arkansas State Chamber of Commerce, with opinion leaning toward the conclusion that the organization has adopted something so obvious as to have been generally overlooked heretofore.

There is nothing complicated about it. We reached the conclusion that capital, seeking locations for industry, would center its attention upon areas where existing enterprises were thriving and that the more prosperous they were the greater the possibility that such localities would be selected. To interest new industries in Arkansas, therefore, we determined that the proper course was to find new outlets for products of those enterprises we already possessed in order that they might become more prosperous. Although this work has been under way a comparatively short time the results are gratifying. It is difficult to realize, but one piece of business made available recently and for which several of our plants are now bidding, involves a sum actually greater than the Chamber's aggregate income from all sources since its organization two years ago.

We have assumed the position that where the industrial development of the state is concerned, the role of the Arkansas State Chamber of Commerce is that of a manufacturers' agent. We are searching for new outlets for our manufactured products and at the same time are prepared to find for concerns elsewhere such commodities as they need if they are produced in the state. In lieu of the usual commission derived by an orthodox agent, our remuneration is the knowledge that such business as we provide for our industries hastens by just that much the day when enterprises elsewhere will recognize Arkansas as an excellent field in which to operate.

DUDLEY V. HADDOCK, Manager.

IRON, STEEL AND METAL MARKET

Dull Summer Outlook for Steel Only Conforms to Precedent

Pittsburgh, May 26—[Special.]—Reports from the steel trade do not appear to be at all favorable, yet they do not show that the outlook is really poor. It seems to have been the habit in the last three months to take an unfavorable view and conditions to date have proved better than the expectations.

No doubt there will be a "dull summer" in steel, for that would merely be in line with precedents. Many observers would call the steel market of the last few weeks and the present a dull one and by the same token the summer would also be dull. It is doubtful whether there will be as much decrease in steel production in the next two months as usually occurs, and as production to date has been high rather than low from the viewpoint of there being a general business depression, the outlook can hardly be called unfavorable.

With an estimate for this month, steel production in the first five months of this year is about 15 per cent below last year, which was an altogether exceptional year, but only 3 per cent above 1928, which was a decidedly good year. It is fully equal to, or above, production in the first five months of any preceding year. There has been 13 per cent increase in steel making capacity in four years, whereby with a trifle heavier tonnage production than in the first five months of 1926 the engagement in capacity is decidedly less, and that is the main thing that makes the steel situation look unfavorable from the producers' standpoint and causes them to be very strenuously competitive in seeking orders both large and small, frequently at the expense of prices.

The trend is seasonally downward in rail production and there will shortly be at least some of the usual seasonal decrease in activity at the agricultural implement shops. Automobile production as officially reported shows 466,887 cars and trucks, United States and Canada, in April, this being somewhat above the preliminary figure and representing 10.6 per cent increase over March. Usually April is the high month, but May occasionally takes the position and this time the chances are about even for this month. Production will no doubt decrease henceforth, but the industry has not been consuming much steel relative to last year or year before and the loss to the steel industry will not be great.

The April report on fabricated structural steel shows rather light lettings. February has been the high month so

far this year, when usually March does better. The four months show only 18 per cent decrease from last year, and shipments only slightly exceeded bookings so that the large order book of January 1 is not appreciably diminished. Lettings so far reported this month tend strongly to indicate an increase.

Line pipe business has been very heavy of late, chiefly for natural gas, but with some gasoline line business also, and much more business is in sight. National Tube Company is now fully booked for some time ahead except on butt weld or standard pipe, which has been sluggish. It has over 1200 miles in 22 and 24-inch with much in smaller sizes, to be made in seamless, electrically welded and lap welded. A seamless tube mill to make 24-inch and smaller was completed at Gary early in the year, a similar mill at Lorain is practically completed, another mill at McKeesport is soon due, and the electric welding department at McKeesport will be ready within a month. Smith at Milwaukee is well booked and other pipe mills are in line to get much business.

Finished steel prices are steady in some lines while in others they are very irregular and seem to be engaged in slipping more or less continuously. In bars, shapes and plates there is nothing like a well defined market, 1.70c on shapes and plates and 1.75c on bars being simply more or less representative. There are fresh reports of shading in sheets and semi-finished steel, after considerable shading, is now openly quoted at \$2 a ton decline, to \$31 for billets, slabs and sheet bars.

Further Weakness Appears in Metal Prices

New York, May 26—[Special.]—Though the Secretary of Commerce stated last week that commodity prices had reached bottom, further price declines have taken place in at least one of the metals and in other commodities as well. In fact, rubber and silk prices joined tin in dipping to the lowest levels in several years. The price of lead was reduced \$1 per ton in the East St. Louis district and \$2 per ton at New York. Tin sold at 31 1/2c per pound on Tuesday, the lowest since 1922. Lead was reduced to 5.50c per pound, New York, the third reduction to that figure this year. Steel prices are also giving ground fairly rapidly with prices the lowest since April, 1922.

Copper quotations have kept unchanged at 13 cents at home and 13.30c c. i. f. European ports. Copper business has

dwindled considerably, though has been far from stagnant all week. In fact, copper business has been brisker than among the other metals. When the price of tin dipped to its low point consumers bought most freely in several weeks, though took no more than 200 tons, whereas 700 tons changes hands in a day when business is unusually heavy. Lead business has been quiet, though improved when the price was marked down on Tuesday. Zinc has been fluctuating between 4.60 and 4.65c per pound, East St. Louis.

There is a general feeling that business is entering the mid-summer lull earlier than usual but that the fall will see decided improvement again. It is believed that automobile production has passed its peak for the first half of the year. The Department of Commerce has just announced automobile production figures for April, which showed 442,630 cars and trucks as against 401,382 in March and 621,910 in April of last year. Production for the first four months has been 1,446,590 as against 2,074,820 in a like period of 1929 and 1,378,942 in the first four months of 1928.

The steel industry gives a rather disappointing performance. Not only are prices sagging, but production drops off about one per cent per week. The best feature is that the changes are gradual. Moreover, it is probable that steel consumption is greater than the current rate of business would imply. In other words, the lowering of prices induces consumers to hold off buying for a time.

Contrary to the general price trends of the metals is quicksilver which has been marked up another \$1 per flask to \$119, as against \$115 a month ago. Supplies are limited and demand is better. Silver prices have been rather weak, with prices barely over 40c per ounce. Antimony is featureless and unchanged at 7 1/2c per pound, duty paid.

Copper sales for export average 4000 tons daily, as against 10,000 tons daily earlier in the month. Domestic business is extremely light. However, it is probable that May sales will have been as large as for any month in history and it is quite possible that all previous records will have been broken. In fact, export sales in May to the end of this week were 225,000,000 pounds greater than for any complete month in history. The large buying does not represent a corresponding improvement in consumption, but rather has been due to the recognition that present prices are bargain ones and that prices will advance before they decline.

Though May copper statistics are not

expected to show much improvement, those for June and July should be decidedly better. In those months surplus stocks of refined copper, which are now over 300,000 tons, should be diminishing rapidly.

Earnings of the copper producing companies are evidently considerably less. Thus the Calumet & Arizona Company cut dividends to \$2 annually, as against \$6, which had been paid before. Other companies are expected to cut dividends, though probably not to so great an extent.

The tin situation continues unfavorable. Stocks of tin in warehouses of the United Kingdom have been increasing to new high levels, though during the past day or two stocks in New York storage places started to decline. American tin deliveries in May are expected to be 6000 tons, or 2000 tons under those for many recent months. Straits tin shipments are expected to be 9500 tons, another bearish factor. Straits tin prices dipped to 31 1/2¢ per pound during the past week and there are many who expect prices will get down to 30¢ before a turn for the better takes place.

Demand for lead was stimulated somewhat when the price was reduced, though consumers were buying chiefly carload lots for prompt shipment, rather than in the hundreds of tons, as when the market is truly active. It develops that a few days ago, when copper buying was at its height, considerable lead was bought along with copper by the cable makers, the second largest users of lead.

Zinc prices hold fairly firm only because of the determination of producers to keep them from going lower. Considering the weakness in other metals and commodities in general, the zinc market has behaved well.

facturers whose order books appear to be well supplied with business and reports are still current that there are healthy specifications in sight and bids have been submitted on considerable tonnage.

Machine shops and foundries are also reporting business in sight with fairly good operations in hand now. Soil pipe market is rather slow but a campaign is being waged along lines of guaranteeing pipe for a period longer than the building in which it is placed and this is expected to have some effect. Specialty shops, including stove foundries, are still buying pig iron in small lots and for early delivery.

Seventeen blast furnaces are reported in operation in Alabama. The make is active, with basic iron predominating in production. Melt of basic is also steady, the Gulf States Steel Company and the Tennessee Coal, Iron & Railroad Company having active requirements. There is a little demand on the open market also for basic iron.

The steel situation of the district shows a little change so far as concerns finishing mills operations, estimate being that about 70 per cent of capacity is the average. Readjustment of prices on certain shapes of steel did not develop much new business, so far as can be learned. Ingot production remains around 90 per cent capacity, four out of the 23 open hearth furnaces of the district manufacturing steel.

Structural steel fabricators report slowness recently in their business. The car works have reduced output materially and this means less steel being used. Plate fabricators are also reporting a little difference in the tonnage required. Wire and wire products have been off for some time. Belief is firm

that the differences recently coming to light are temporary and that shortly there will be improvement in all directions. Survey of developments in hand include the Tennessee Coal, Iron & Railroad Company's improvement, betterment and expansion program at Fairfield and Ensley; new plate and sheet mills of the Gulf States Steel Company at Gadsden, and addition to the monocoast pipe department of the American Cast Iron Pipe Company.

Hardie-Tynes Manufacturing Company has contract for the manufacture of the special steam-shovel dipper being built for the government for use on Panama Canal. Error gave credit to others in this work. Long timber was brought here from Portland, Ore.

Scrap iron and steel is slow, heavy melting steel still holding firmly to \$10.75 to \$13 in price.

The coke market is fairly good. While practically all ovens of the by-product coke works are in operation, capacity output is not being sought. A little coke is still leaving the district. Base price has not been changed for many months, \$5, foundry coke.

Quotations for pig iron and iron and steel scrap are as follows:

PIG IRON.

No. 2 foundry, 1.75 to 2.25 per cent silicon, f. o. b. furnaces, \$14.00; No. 1 foundry, 2.25 to 2.75 per cent silicon, \$14.50; iron of 2.75 to 3.25 per cent silicon, \$15.00; iron of 3.25 to 3.75 per cent silicon, \$15.50.

OLD MATERIAL.

| | | |
|---------------------------|-------|--------------------|
| Old steel axles | ..... | \$14.00 to \$15.00 |
| Old iron axles | ..... | 14.00 to 15.00 |
| Old steel rails | ..... | 11.00 to 12.00 |
| Heavy melting steel | ..... | 10.75 to 13.00 |
| No. 1 cast | ..... | 10.00 to 11.00 |
| Stove plate | ..... | 10.00 to 11.00 |
| No. 1 railroad wrought | ..... | 10.00 to 11.00 |
| Old car wheels | ..... | 10.00 to 11.00 |
| Old tramcar wheels | ..... | 11.00 to 12.00 |
| Machine shop turnings | ..... | 7.00 to 8.00 |
| Cast-iron borings | ..... | 7.00 to 8.00 |
| Cast-iron borings (chem.) | ..... | 12.00 to 13.00 |

Steadiness in Evidence in Pig Iron Production

Birmingham, Ala., May 26—[Special]—Steady melters of pig iron have purchased against probable needs for the last week in May and the following month. Smaller melters are buying day in and out, in small tonnages with immediate delivery stipulated. There is warrant for steady production. A few sales of iron were reported during the month for shipment into the middle-West and to the East, along the Atlantic coast and there will be further reduction of the surplus stock of iron. An authoritative statement is to the effect that the iron stock on furnace yards in the South is lower now than it has been in 18 months and there is intimation that no addition to this stock will be seen this year, at least. Steady melters include the cast iron pressure pipe manu-



Mobilizing for War on "Old Man River."

Work will soon be actively under way on scores of construction projects designed to curb the ravages of the "Father of Waters" and contractors are, therefore, moving new equipment into place and tuning up machines already on the ground so that work may go forward with all possible speed during the none too long period of low water on the Mississippi. Here are 10 Caterpillar 60s, delivered to the United States Engineer Corps at Leland Dike, Ark., for service in levee construction.

NEW AND IMPROVED EQUIPMENT

Gas and Oil Electric Locomotives

A new line of gas electric and oil electric locomotives has been introduced in sizes from 25 to 60 tons by the Fate-Root-Heath Co. (Plymouth Locomotive Works) Plymouth, Ohio. An accompanying illustration shows model GEL

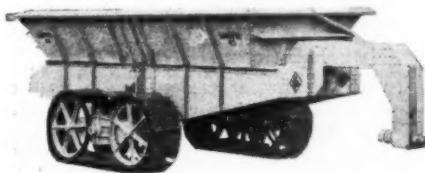


Plymouth Locomotive, 50-ton Gas Electric

50-ton gas electric, 31 feet 4 inches long and 9 feet wide, with a frame of 15-inch I beams and 9-inch girder beams and cast steel bumpers and bolsters. Two 4-wheel, spring equalized trucks permit the locomotive to take sharp curves and ride rough track. It is equipped with two 6-cylinder engines, one in each end of the locomotive, developing 350 horsepower at 1000 R. P. M.; two Westinghouse generators and four Westinghouse motors. A single operating station controls the engines and takes care of reversing, acceleration and speed of the locomotive. Westinghouse air brakes are standard equipment. The locomotive has a tractive force of 33,000 pounds at two miles an hour and a maximum speed of 36 miles per hour.

Adams Selling Smith Trailers

The J. D. Adams Company, Indianapolis, Ind., announces it has taken over the sale of Smith bottom dumping trailers in states covered by direct factory representatives. These trailers,



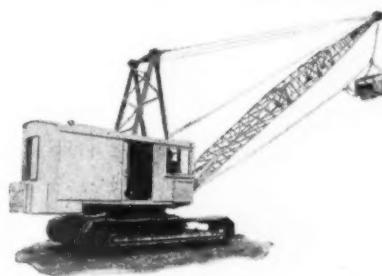
Smith Bottom Dumping Trailer

made by the Smith Trailer Corporation, Syracuse, N. Y., come in both the crawler and round wheel types from 5½ to 8½ yard capacities and for both elevating grader and shovel loading. They are equipped with Amsco tracks made by the American Manganese Steel Company, Chicago Heights, Ill., while the bodies are of all riveted construction with heavy railroad car bulb angles around the top of the body and partition

in the center. The cable wind-up mechanism operates through reduction gears for easy operation and the doors are swung on chain hinges. Both the crawler and round wheel types are designed to operate singly or in trains. Information and literature regarding the trailers may be obtained from the Memphis, Dallas or Atlanta branches of the Adams company.

Northwest Dragline

To meet a demand for a large mobile dragline for drainage and general construction, the Northwest Engineering Company, Chicago, announces a new machine of two cubic yards capacity. This unit handles a bucket on a 50-foot boom at a 40-foot radius and is equipped with crawlers 17 feet 5 inches long, with 33-inch treads, giving a bearing



A Mobile Dragline of 2-Cubic Yard Capacity

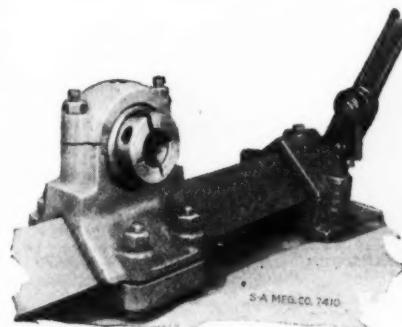
area capable of carrying the machine over "extremely soft going." A 200-gallon gasoline tank is provided. A Northwest variable speed motor, accelerator controlled, supplies power, the clutches being shifted through the "feather-touch" control. All high speed shafts are mounted on ball bearings and the drive from the engine is through helical gears mounted on ball and roller bearings running in oil. Positive traction makes easy maneuvering.

Self Priming Centrifugal Pump

A self priming centrifugal pump, designed by C. I. Longenecker, engineer of the Chain Belt Company, Milwaukee, Wis., was recently placed on the market. The pump requires no attention, it is said, even though the water goes below the end of the hose. The vacuum is maintained automatically and the pump needs no priming. The new pump is an addition to the pumps the company now manufactures and is a part of its line of construction equipment, consisting of concrete mixers, pavers, saw rigs, central mixing plants, etc.

Conveyor Belt Tension

By reason of continual stretching in use, conveyor belts require a takeup pulley to eliminate the slack and maintain a fairly uniform belt tension. These takeups are of two general types—the automatic or gravity type for long and heavy duty conveyors and the screw type for shorter belts. The screw takeup bearing may be pulled backward on its base as the belt stretches and is said to be generally satisfactory for conveyors up to 200 feet long. The bear-



Anti-Friction Takeup Bearing

ings range in size to suit the pulley shaft and in maximum bearing travel to suit the length of the conveyor. An illustration shows a new anti-friction takeup bearing developed by the Stephens-Adamson Manufacturing Co., Aurora, Ill. A double Timken roller bearing in a special self-aligning housing is moved backward or forward on a structural steel angle by a screw, the latter being protected by the steel angle and operated by a ratchet lever designed for use in cramped quarters. The takeup is furnished for shafts from 1-15/16-inch up to 4-15/16 inch diameter and with a maximum shaft travel of 24 to 54 inches. The inner race is fitted with an adapter which receives the shaft without turning or shouldering.

\$1,000,000 Water Line Contract

Toyah, Tex.—The Texas and Pacific Railway Company, E. F. Mitchell, chief engineer, Dallas, has awarded contract to the Panhandle Construction Co., Lubbock, Tex., to construct a combination 12-, 10- and 8-inch water line from Toyah to the Big Aguja Canyon in the Davis Mountains, about 37.5 miles. The line is intended to furnish water to Toyah and to the railway company here, involving a cost of approximately \$1,000,000. Material is being furnished by the railway.

CONSTRUCTION DEPARTMENT

and

NEW ENTERPRISES

Covering the initial announcements of new undertakings with additional information about enterprises previously mentioned. The date at the end of an item indicates preliminary facts were given in a previous issue.

Building and Construction Proposed and Contracts Awarded; Manufacturing, Mining, Power, and Land Developments; Public Works; Transportation; Communication; Financial Enterprises; New Business Opportunities Reported in the Sixteen Southern States.

When writing to a new firm or corporation the name of at least one of the incorporators should be placed on the envelope to expedite its handling by the local postoffice. Mail may be delayed unless complete address is given.

The Daily Construction Bulletin of the Manufacturers Record gives each business day advance news published in this weekly review. It is invaluable to those requiring prompt information. Subscription price \$40.00 a year.

Airports, Airplane Plants, Etc.

Ala., Birmingham—City, Park & Recreation Bd., F. G. Swaim, Secy., let contract to Sullivan, Long & Haggerty, Bessemer, for drainage at airport, 64th St. and 43rd Ave.; A. J. Hawkins, City Engr. 5-8

Ark., Fayetteville—City voted \$20,000 bonds for enlarging and improving airport; install 2 all-weather runways, construct hangar and install electric lights. 4-17

Fla., Jacksonville—Dept. of Commerce, F. C. Hinsburg, Ch. Engr., Airways Div., Washington, D. C., started survey work on Jacksonville - Savannah - Raleigh - Richmond Airway.

La., Baton Rouge—Police Jury of East Baton Rouge Parish opens bids June 10 for furnishing all materials and constructing administration building and hangar at East Baton Rouge Airport; separate bids to be received same date for plumbing, heating and electric wiring; administration building, 2 story, brick, frame, include waiting room, office, weather bureau room, pilots lounge room, rest room, sleeping quarters, baths, etc.; hangar, 2 story, 100x120 ft., brick, with steel trusses and steel doors, include observation tower, beacon light, machine shop, parts department, storage space, etc.; also receive bids at same time for field lighting equipment and installation, according to plans in office of A. G. Seifried, Inc.; Jones, Roessle, Olschner & Weiner, Archts., Maison Blanche Bldg., New Orleans, and Reymond Bldg., Baton Rouge. 5-8

La., Shreveport—City Council accepted plans for municipal airport near Agurs and will receive bids June 5 for 5 units; includes 3-story, brick and conc., Spanish type administration building, all-steel, 100x100-ft. hangar, field lighting system, conc. walks and aprons, and field fencing and parking space for 2000 automobiles; plans by Southern Air Transport, Inc., Fort Worth Natl. Bank Bldg., Fort Worth, Tex., with Wings, Inc., as local agency; Olschner & Weiner, Supvg. Archt., Ardis Bldg. 5-22

Md., Baltimore—City votes in November on \$2,500,000 bonds for airport.

Mo., Jefferson City—Jefferson Airways, Inc., Theodore R. Oberman, Pres., plans air service with base here and operating amphibion planes along Missouri River route between St. Louis and St. Joseph.

Tex., Fort Worth—Dept. of Commerce, F. C. Hinsburg, Ch. Engr., Airways Div., Washington, D. C., started survey work on San Diego-El Paso-Fort Worth airway.

Tex., Harlingen—City plans voting soon on \$150,000 airport bonds.

Tex., Post—Chamber of Commerce, George Samson, Secy., has plans under way for improving airport; auditorium to be converted into hangar.

Bridges, Culverts and Viaducts

Proposed Construction

D. C., Washington—Dist. Comms. receive bids June 4 for reconstruction of Kenilworth Ave. bridge over Watts Branch.

Fla., Jacksonville—City, M. W. Bishop, Sec., receives bids June 4 for 2 rein. conc. box culverts over Long Branch on Liberty St.

Ga., Atlanta—Southern Ry., B. Herman,

Ch. Engr., Washington, D. C., and Central of Georgia Ry. Co., C. E. Weaver, Ch. Engr., Savannah, plan repairing Nelson St. viaduct.

Ky., Henderson—W. H. Courtenay, Ch. Engr., Louisville & Nashville R. R. Co., Louisville, advises plans have not yet been made for bridge across Ohio River at Henderson.

5-22

Ky., Louisville—Kentucky & Indiana Terminal Railroad Co., W. S. Campbell, Mgr. and Ch. Engr., receives bids June 25 for excavation, embankment, masonry, steel work, etc., for construction of underpass for 5 streets and one alley, between Market and Kentucky St.; 16,000 cu. yd. excavation, 117,000 cu. yd. embankment, 8000 cu. yd. rein. conc., masonry, 800 tons struct. steel; Arthur A. Will, Dir. of Public Works, Louisville. 5-22

Ky., Rockport—War Dept., Washington, approved plans, Illinois Central R. R. Co., A. F. Blaess, Ch. Engr., Chicago, to reconstruct railroad bridge across Green River, Rockport.

Md., Baltimore—City, Bd. of Awards, received low bid from Catalano and Pecora, Cold Spring Lane and P. R. R., \$436,367, for Eastern Ave. underpass, for elimination of grade crossing on Pennsylvania R. R. at Ninth and Eleventh St.; Nathan L. Smith, Highways Engr.; J. L. Greiner Co., Engr. 5-8

Maryland—See Roads, Streets, Paving.

Md., Baltimore—See Roads, Streets, Paving.

Miss., Woodville—Wilkinson County Bd. of Supvrs., C. A. Coon, Chancery Clk., receives bids June 4 for 8 bridges on 2 improved highways in Second Separate Road Dist. 4-3

Missouri—State Highway Coms., receives bids for 41 bridges. See Roads, Streets, Paving.

Mo., Boonville—Missouri-Kansas-Texas R. R. Co., F. Ringer, Ch. Engr., St. Louis, advises application for permit to construct Missouri River Bridge at Boonville, in hands of War Dept.; bids cannot be entertained until permit issued for approved type of construction. 4-17

Mo., St. Louis—City, Bd. of Public Service, E. R. Kinsey, Pres., and Wabash and Chicago, Rock Island and Pacific Ry. Co., L. R. Bowen, Ch. Engr., Chicago, completed plans for viaduct at Lindell and Union Blvd.; estimated cost \$480,000.

Mo., St. Louis—City, L. R. Bowen, Ch. Engr. of bridges and buildings, plans beginning construction in about 2 months of new viaduct carrying Grand Dr., Forest Park, over Wabash R. R. tracks; conc., 90 ft. wide and 270 ft. long, cost \$80,000.

North Carolina—State Highway Coms., receives bids for 2 bridges. See Roads, Streets, Paving.

Okla., Ada—State Highway Coms., Oklahoma City, has preliminary plans for \$30,000 underpass under railroad tracks at Mississippi St.; A. R. Losh, State Highway Engr.

Okla., Newkirk—Kay County Comms. receive bids for 4 bridges. See Roads, Streets, Paving.

Okla., Oklahoma City—Oklahoma County Comms. plan receiving bids for bridge 3 1/2 mi. southwest of Britton, 42-ft. bridge at head of Belle Isle lake, on Pennsylvania Ave.; 27 culverts to complete drainage structure on 10 mi. Road No. 14, and maintenance graveling through county; cost \$52,500; J. Floyd Frazier, County Engr.

Oklahoma—State Highway Coms., received low bids for 2 bridges. See Roads, Streets, Paving.

Okla., Oklahoma City—City, E. M. Fry, Mgr., St. Louis, San Francisco Ry. Co., F. G. Jonah, Ch. Engr., St. Louis, Mo., and Chicago, Rock Island & Pacific R. R. Co., W. H. Peterson, Ch. Engr., LaSalle St. Station, Chicago, have preliminary plans for rein. conc. viaduct or underpass under tracks at Milwaukee and South Robinson St.; W. W. Small, City Engr.

South Carolina—State Highway Coms., received low bids for 7 bridges. See Roads, Streets, Paving.

Tennessee—Dept. of Highways and Public Works receives bids for 7 bridges. See Roads, Streets, Paving.

Tex., Fairfield—Freestone County plans 140 ft. steel underpass, 24 ft. wide, on Highway No. 32; cost \$38,000; M. D. Hodges, Res. Engr.

Tex., Graham—Young County Comms., W. F. Parsley, County Judge, receive bids June 2 for 5 or more bridges on Highway No. 79.

Tex., Karnes City—Karnes County, Thos. B. Smiley, Judge, plans .3907 mi. steel and conc. underpass, including approaches, under San Antonio and Aransas Pass Ry., Highway No. 72, at Runge; Jas. V. Curnutt, Res. Engr.

W. Va., Wheeling—See Railways.

Contracts Awarded

Ark., Clarendon—Virginia Bridge & Iron Co., Roanoke, Va., has sub-contract for 4900 tons fabricated struct. steel for highway bridge over White River, Clarendon; Austin Bridge Co., 1813 Clarence St., Dallas, has contract for bridge. 5-22

Ark., Clarendon—Senate passed House bill extending date one and three years respectively for starting and completing bridge over White River, Clarendon; contract let to Austin Bridge Co., 1813 Clarence St., Dallas. 5-22

Ark., Little Rock—Comms. of Street Improvement Dist. No. 508, A. C. Jones, Sec., let contract to Luten Bridge Co., A. O. U. W. Bldg., for 900-ft. long, 30-ft. wide viaduct, over Rose Creek, Rock Island R. R. tracks, and spur of Missouri Pacific tracks, on Lincoln Ave.; Frank A. Pritchett, Engr. 4-3

Georgia—State Highways Bd. let contracts for 3 bridges. See Roads, Streets, Paving.

Tennessee—Dept. of Highways and Public Works, let contracts for 16 bridges. See Roads, Streets, Paving.

Texas—State Highway Coms., Austin, let contracts for 2 bridges. See Roads, Streets, Paving.

Tex., Bronte—Atchison, Topeka and Santa Fe Ry. Co., G. W. Harris, Ch. Engr., Chicago, let general masonry contract to Sharp & Fellows, Los Angeles, Cal., for bridge over Colorado River near Bronte, consisting of deck spans on masonry piers; superstructure to be erected by owner. 5-22

Canning and Packing Plants

Fla., Canal Point—Loy Connor, Lake Wales Rd., Connersville, reported, rebuild burned packing plant; corrugated metal on frame walls, metal roof; cost \$20,000; D. Hollsinger, Archt., Court House, Bartow.

Fla., DeSoto City—Wm. G. Roe, Winter Haven, reported, has contract for packing

plant for Dr. Etheridge; 1 story; cost \$30,000.

Fla., Lake Hamilton—Lake Hamilton Citrus Growers Assn. having revised plans prepared by Chas. F. Kuhn, Archt., for packing plant; stone, steel frame, comp. roof, cost \$40,000.

Fla., Orlando—Peerless Packers, Inc., chartered; M. McKenney, R. C. Steck.

Fla., Punta Gorda—Geraci Packing Co. incorporated; D. Geraci, A. Sarlo.

Mo., Mountain Grove—Arthur Thomas, Dawson, reported, establish vegetable canning plant.

Mo., Mountain Grove—Killian Interests, Marshfield, reported, erect vegetable canning plant.

Coal Mines and Coke Ovens

W. Va., Raleigh—Lanark Smokeless Coal Co., capital \$25,000, incorporated; A. M. Pateson, Lanark; Mayme Lopin, Charleston.

Concrete and Cement Plants

Mo., Springfield—See Lumber Enterprises.

Cotton Compresses and Gins

La., Jonesville—United Moss Gins, Inc., chartered; H. W. DeTissier, T. C. Gibson.

Tenn., Somerville—Bowers & Latta Gin Co., capital \$50,000, incorporated; J. P. Bowers, W. C. Latta.

Tex., Dallas—Texas Farm Bureau Gin Co., Inc., Farm Bureau Bldg., increased capital \$200,000 to \$1,000,000, for building and buying cotton gins in Texas territory.

Tex., Liberty—Charles W. Fisher, reported, construct \$17,000 cotton gin.

Tex., McKinney—White & Wilson Co. increased capital \$21,000 to \$40,000.

Cottonseed-Oil Mills

La., Monroe—Union Oil Mill, Inc., West Monroe, reported, construct \$50,000 addition to warehouse for storing cotton seed hulls.

Tex., El Paso—Farmers' Cottonseed Products Co., capital \$250,000, incorporated; J. F. Reaves, 3424 Fort Blvd.

Drainage, Dredging and Irrigation

Ala., Montgomery—Montgomery City and County authorities, J. M. Garrett, City Engr., considering \$50,000 drainage ditch, beginning near Atlantic Coast Line Ry., West End, extending northwesterly to Alabama River beyond Hunter Station on Birmingham Hwy., 6 mi. long; drain swamp land.

Ark., Pine Bluff—Cousart Bayou Drainage Dist., A. Triplett, let contract to Kotchizky Bros., England, Ark., at 13.9 cents per cu. yd., for 2 drainage laterals aggregating approx. 4 1/2 mi., 77,000 cu. yd. excavating; Baxter Engineering Co., Engr., Donaghay Bldg., Little Rock.

La., Rayne—First Ward Drainage Dist., Bertha Doty, Clk., votes June 16 on \$90,000 bonds for constructing ditches in subdrainage Dist. No. 2.

Md., Baltimore—City votes in November on \$10,000,000 harbor improvement bonds.

South Carolina—Canal—See Roads, Streets, Paving.

Electric Light and Power

Electric light and power work in connection with many LAND DEVELOPMENT operations involves the expenditure of large sums of money. See that classification for details.

Ala., Bridgeport—City granted franchise to Alabama Power Co., Birmingham; will enlarge substation; company recently acquired interests of Tennessee Power Co., in north Alabama.

Georgia—Stockholders of Columbus Electric and Power Co., Columbus, meet May 26 to consider consolidation of Columbus Electric and Power Co. and Georgia Power Co., Atlanta, consolidated company to be called Georgia Power Co. 4-3

Ga., Atlanta—City, W. P. Price, Pur. Agt., reported, erect addition to boiler house building at Chattahoochee; 2 story, 30x40 ft., conc. footings, brick walls, steel sash, comp. roofing.

Ga., Metcalf—Town, reported, negotiating with town of Thomasville for extension of electric line.

Md., Frederick—Fairbanks, Morse & Co., Chicago, Ill., reported, have contract for 360

h. p. Diesel engine; city plans installing street lighting system.

Mo., Cape Girardeau—See Water Works.

Mo., St. Louis—Union Electric Light & Power Co., Twelfth and Locust Sts., reported, let contract to Fruin-Colnon Contg. Co., 501 Merchants-LaLaclede Bldg., for sub-station addition; brick, 1 story, 33x52 ft.

Oklahoma—Grand Hydro Electric Co., Wash E. Hudson, Pres., Ritz Bldg., Tulsa, reported, begin construction in fall on first of 4 proposed dams on Grand River; preliminary surveys completed; expend \$26,000,000. 11-14

Okl., Wilburton—City, reported, plans \$30,000 Diesel engine power plant; V. V. Long & Co., Engrs., Colcord Bldg., Oklahoma City.

Tex., Austin—Emery, Peck & Rockwood Development Co., 208 S. La Salle St., Chicago, Ill., and 817 Scarborough Bldg., Austin, advises actual construction on Colorado River projects has not started and will probably be 2 or 3 months before contracts are let; Fargo Engineering Co., Jackson, Mich., Engrs. 5-10

Tex., Seguin—Texas Hydro Electric Co., let contract to Sumner-Sollitt Co., Natl. Bank of Commerce Bldg., San Antonio, for three dams on Guadalupe River; 2 to be near Gonzales, heads of 29 and 28 ft.; third dam about 3 miles from Seguin, head of 30 ft.; each dam will have installed capacity of about 3000 h.p. and power will be sold to existing utilities; active construction work will probably start within 3 or 4 weeks; equipment contracts have not been let and bids will probably be requested within next 2 weeks; Fargo Engineering Co., Consult. Engrs., Union & Peoples Bank Bldg., Jackson, Mich. 5-22

Flour, Feed and Meal Mills

Tex., Bishop—Miracle Feed Mill, John A. Wennechs, owner, construct 24x80 ft. sheet iron warehouse; construction in charge G. L. Tubbs.

Foundry and Machine Plants

N. C., Gastonia—Gastonia Roller, Flyers & Spindle Co., formed by merger of Lowry Bros. Textile Machine Works, 1337 W. Second St., Gastonia, and Textile Spindle & Flyer Co., 501 W. Palmer St., Charlotte; B. E. Byrd, Pres.; C. E. Huneycutt, Secy.-Treas.; repair work on steel rollers, flyers and spindles.

Okl., Oklahoma City—Pallady Welding Co., 415 W. Fourth St., let contract to Harry Reynolds Construction Co., Franklin Bldg., for \$25,000 plant; 1 story, 50x100 ft.

Garages and Filling Stations

Ark., Little Rock—Acme Tire & Vulcanizing Co. incorporated; J. E. Mitchell, 4022 W. 13th St.

D. C., Washington—Commrs., District of Columbia, District Bldg., open bids June 10 for building to be used as garage, shops and laboratories and for addition to D. C. auto repair shop; following estimating on general contract: Boyle-Robertson, Inc., Evans Bldg.; Arthur L. Smith Co., Arthur L. Smith, 2339 Pennsylvania Ave., N. W.; Bahen & Wright, 916 Rhode Island Ave., N. E., and W. E. Mooney, 2939 Pennsylvania Ave., N. W., Washington; Northeastern Construction Co., 6 W. Madison St., Baltimore, Md.; Castor & Castor, 4205 New Utrecht Ave., Brooklyn, N. Y. 5-22

D. C., Washington—Shell Eastern Petroleum Products, Inc., Court Square Bldg., Baltimore, Md., has permit for \$11,500 service station, 901 N. Capitol St. 3-13

Ga., Augusta—Shell Petroleum Corp., care P. B. Burkhalter, Rhodes-Haverty Bldg., Atlanta, erect \$12,000 filling station, Seventh and Greene St. by day labor and sub-contracts; 1 story, tile, stucco, conc. floors, built-up roof, hot air heating; Sam Pritchard Supt. of Construction; private plans.

Ga., Macon—Stewart Oil Co., Harry C. Stewart, 713 Hillyer Ave., erect additions to garage building; brick, comp. roof, Spanish design; owner builds; Dennis & Dennis, Archt.

Ky., Ashland—Ashland Refining Co. acquired site Winchester Ave. and 21st St.; reported, erect super service station.

Ky., Shelbyville—Shelby Motor Co., capital \$15,000, incorporated; Howard Pearce, Charles B. Long.

Ky., Sturgis—Bradburn Motor Co., capital \$25,000, incorporated; C. E. Bradburn, A. H. Perkins.

La., Monroe—Twin City Motor Co., 402 Walnut St., has low bid from L. D. Davis, West Monroe, at \$25,892, for auto sales and garage building, Grand and Mulberry St.; J. A. P. Diesel engine; city plans installing street lighting system.

W. Smith & Associates, Archt., Ouachita Bank Bldg.

La., New Orleans—Borden-Aicklen Auto Supply Co., Inc., 613 Baronne St., has plans in progress, ready for bids about June 10 for \$40,000 auto supply building; 1 and 2 story, rein. conc., brick, 13,000 sq. ft. floor space, rein. conc. foundation, steel and iron work, plate glass fronts, steel sash, sheet metal work, millwork, conc. and wood floors; W. W. Van Meter, Archt., 606 Commercial Pl.

La., Shreveport—Standard Oil Co. of Louisiana, Continental Bank Bldg., leased 4 sites for gasoline stations.

Louisiana—Standard Oil Co. of Louisiana, 2134 St. Charles Ave., New Orleans, leased sites in Caddo Parish for 4 filling stations; plans under supervision of company engneers, New Orleans.

La., New Orleans—Railway Express Agency, Inc., let contract to W. H. Dudley, Stern Bldg., for remodeling stable building, Dryades and Calliope St., into storage garage, to cost approx. \$30,000; brick, steel, rein. conc. foundation, built-up comp. roof, steel and iron work, conc. floors, sheet metal work, steel rolling doors, steel sash, sprinkler system; contractor taking bids on sub-contracts; J. M. Dunham, Archt.; Theard & Matthews, Asso. Archt., Balter Bldg.

Md., Baltimore—Atlantic Refining Co., 260 S. Broad St., Philadelphia, Pa., let contract to Metzger & Co., Otis Bldg., Philadelphia, for \$25,000 service station, 114 E. Pratt St.; 1 story, brick; private plans. 4-17

Md., Baltimore—Sherwood Bros., Inc., Continental Bldg., will let contract in few weeks for alterations and addition to garage and filling station, Reisterstown Rd. and Garrison Blvd.; \$15,000; Cloyd & Nelson, Friz, Archt., Lexington Bldg.

Miss., McComb—American Oil Co., Sixth St., Hattiesburg, receiving bids for master service station, 3 stores and storage garage, State St.; brick, cast stone, 1 story, 110x88 ft., stucco, motor oil pumps to be semi-built-in; A. B. Williams, Local Representative.

Mo., Jefferson City—Missouri State Highway Comsn., Highway Bldg., drawing plans for \$220,000 garage and record storage building; 122.5x214.5 ft., 2 and 3 stories, conc. floors, built on gypsum slab roof, conc. brick, tile, struc. steel; equipment to cost \$50,000; private plans.

Mo., Moberly—Proctor Bros., Columbia, have plans complete for \$10,000 filling station; 1 story, 20x50 ft., brick, overhead doors, steam heating, struc. steel, conc. floors; Ludwig Abt, Archt., Riegel Bldg.

Mo., Springfield—Service Oil Co. let contract to S. E. Dobbs, 530 W. Lynn St., for \$10,000 service and bulk plant, 1101 St. Louis St.; 1 story, brick, steel, conc.; Heckenville & Mark, Archt., Landers Bldg.

Mo., St. Louis—Standard Oil Co., 314 N. Jefferson St., let contract to Martin Rosenmeyer, Title Guaranty Bldg., for \$10,000 filling station; 1 story, 33x55 ft., brick, conc. foundation, comp. roof, hot air heating; excavating; private plans.

Mo., St. Louis—Phillips Petroleum Co., Bartlesville, Okla., has revised plans in progress for garage, Beale and Suburban Ave., St. Louis County; probably 2 story, brick, 100x62 ft.; private plans.

Mo., St. Louis—Warson Petroleum Co., Paul Brown Bldg., plans establishing chain of filling stations and erecting \$250,000 storage and distribution plant, Macklind Ave. and Missouri Pacific tracks. See Gas and Oil Enterprises.

Mo., Jefferson City—State Highway Dept. plans erecting large garage.

Mo., Joplin—Gateway Tire Co., Inc., 701 Schifferdecker St., started excavating for \$25,000 super service station, Seventh and Wall St.; light brick, Spanish design.

N. C., Greensboro—C. H. McKnight Tire & Service Co., 408 W. Market St., let contract to Burns-Hammond Construction Co., Jefferson Standard Bldg., for service station; 1 story, brick, conc. floor and driveways, comp. roof.

N. C., Hickory—99 Tire and Battery Co., capital \$40,000, incorporated; F. Lawrence Cline, Bascom B. Blackwelder.

Okl., Oklahoma City—C. S. Owens, 115 W. 26th St., South, erecting \$14,000 service station, S. Robinson St., by day labor; 1-story, brick; private plans.

S. C., Charleston—Standard Oil Co., John C. King, Agt., Peoples Bldg., acquired site, Calhoun St. and Rutledge Ave., for filling station.

Tenn., Milan—Ta-Caw Chevrolet Co., capital \$15,000, incorporated; L. E. Tate, H. E. Cawthon.

Tex., Dallas—Firestone Tire & Rubber Co., 1920 Ross St., Dallas, and Akron, Ohio, applied for permit to erect \$41,000 service station; brick.

Tex., Dallas—Page Bros., 2225 N. Akard St., applied for permit to erect \$12,500 service station.

Tex., Houston—Humble Oil & Refining Co., Humble Bldg., started erecting \$11,000 filling station, 4924 Main St.; R. Wilson, Gen. Contr.

Tex., Texas City—A. B. C. Garage, A. B. Phelps, 219 E. Pecan St., plans \$150,000 parking garage; 4 story, 500 car, brick, steel, concrete, ramp or elevator, 200,000 sq. ft. floor space; private plans.

Va., Danville—Five Forks Battery Station, Inc., capital \$25,000, chartered; T. D. Pittman.

Va., Marion—Sprinkle Motor Corp., capital \$25,000, incorporated; E. B. Sprinkle.

Va., Richmond—City, Dept. of Public Works, opens bids June 2 for \$20,000 garage at southern end of state fair grounds; brick; for storing city equipment.

W. Va., Wheeling—Twelfth Street Garage, C. A. Vaden, Pres., Wheeling Bank and Trust Bldg., let contract to R. R. Kitchen Co., 37 19th St., for \$125,000 garage, 1120 Eoff St.; 6 story, 125x66 ft., concrete floors; install equipment costing \$25,000.

Gas and Oil Enterprises

Ala., Selma—Alabama Natural Gas Co., controlled by Tri-Utilities Corp., 44 Wall St., New York, reported, expend \$60,000 for pipe preparatory to changing from artificial to natural gas; install governor stations, etc.

Ky., Ashland—Moody-Seagraves Co., Esperon Bldg., Houston, Tex., Hope Engineering Co., reported, joined American Utilities & General Corp., 120 Broadway, New York, in acquiring American Fuel & Power Corp., Ashland; purchase will add proven gas reserves of 200,000,000 cu. ft. to group's reserve; majority of properties are located in Kentucky; American Fuel and Power Corp., operates in Huntington, W. Va., Ironton, O., and Ashland, Ky.

Ky., Somerset—Craftsman Oil Co. incorporated; Charles Henley, Neal Scott.

Ky., Topmost—Hall Oil & Gas Co., incorporated; David and Lawrence Hall.

La., Monroe—Southern Gas Lines, Inc., subsidiary of Columbian Carbon Co., 45 E. Forty-Second St., New York, reported, let contract to George R. Hunsicker, for laying nine mile of 12½-in. gas line from Fairbanks to Monroe; cost \$115,000; total capacity of 5 gas lines of company from gas fields to Twin Cities will be about 100,000,000 cu. ft. gas daily.

La., Shreveport—Standard Oil Co. of Louisiana, Continental Bldg., reported, construct two 55,000 bbl. tanks on leases in Kingston-Holly field of DeSoto Parish; erect temporary pumping station, later \$150,000 permanent pumping station.

Mo., Joplin—Lane Oil Co., 702 Virginia St., increased capital, \$30,000 to \$60,000.

Mo., St. Louis—Warson Petroleum Co., Paul Brown Bldg., reported, let contract to The Austin Co., 16112 Euclid Ave., Cleveland, for \$250,000 storage and distribution plant on 5 acre site Macklind Ave.; also plans to construct chain of filling stations; storage plant will consist of 2-story building for offices; garage for 45 trailer trucks; large storage tanks with total capacity of 5,000,000 gal. and 300 h. p. boiler plant.

N. C., Chapel Hill—Durham Gas Co., Durham, reported, extending gas line; cost \$150,000.

N. C., Raleigh—Carolina Pennzoll Co., Inc., capital \$100,000, incorporated; Sam M. Inman, 701 N. Blount St.

N. C., Southern Pines—Acme Oil Co., capital \$40,000, incorporated; W. P. Harden, D. S. Packard.

Okl., Oklahoma City—Traders Oil & Gas Co., capital \$100,000, incorporated; H. A. Waterman, H. E. Moore.

Okl., Ponca City—Merger, reported, under way of Continental Oil Co. and Tide Water Oil Co., 11 Broadway, New York; proposition will probably be submitted to stockholders of both companies in about 6 weeks; plans involve \$250,000,000.

Okl., Poteau—Spurio Gas Co., capital \$60,000, incorporated; J. D. Talbott, Grover Liedie.

Okl., Tulsa—Lone Star Gas Co., 1915 Wood St., Dallas, Tex., reported, negotiating for properties of American Natural Gas Corp., 37 William St., New York.

Okl., Tulsa—Stockholders of Sinclair Consolidated Oil Corp., Sinclair Bldg., reported, approved increase in authorized common stock to 20,000,000 shares of no par value from present 10,000,000 shares, to provide surplus stock for possible expansion, etc.

S. C., Gaffney—South Carolina Gas Co., Frederick St., chartered as local company for constructing Gaffney gas system; has site on S. Granard St. for plant; company is subsidiary of Great Northern Utilities Co., 3033 Drexel Blvd., Chicago, Ill., laying pipe lines and supplying various cities in North and South Carolina.

Tenn., Murfreesboro—Tennessee Gas Co., 22 W. Monroe St., Chicago, Ill., reported, start work soon on laying 15 miles gas lines and erecting gas plant; cost \$150,000.

Tenn., Ripley—Home Oil Co. of Tennessee, incorporated; R. M. Prichard, W. R. Miller.

Tex., Amarillo—Bonded Motor Oil Co., Inc., chartered; C. W. Carson, Jr., 2047 Hayden St.

Tex., Beaumont—Esteline Oil Co. incorporated; O. M. Lord, American Natl. Bank Bldg.

Tex., Borger—Phillips Petroleum Co., Bartlesville, Okla., reported, constructing 2 units to Alamo refinery; increase capacity to 20,000 bbls.

Tex., Fort Worth—Wallman Corp., incorporated; L. R. Manning, 1814 Eighth Ave.

Tex., Mission—Valley Consumers Oil Co., incorporated; J. S. Marell, J. R. Herget.

Tex., San Antonio—S. F. & C. Oil Co., incorporated; A. A. Seeligson, 115 E. Ashby St.

Tex., Sweetwater—Sweetwater Home Oil Co., Inc., chartered; M. E. Coley, G. H. Johnson.

Tex., Waco—Riverland Oil Co. incorporated; Frank Bryan, 3420 Cheateau Ave.

Va., Lynchburg—Gulf Refining Co., Frick Annex, Pittsburgh, Pa., reported, establish distribution station at Seventeenth St. and Garfield Ave.; cost \$25,000.

Va., Martinsville—Continental Oil Co., Ponca City, Okla., reported, acquired, properties of Virginia-Carolina Gas & Oil Co., successor to Harris Oil Co.; properties include storage facilities at Fiedale Station and 20 filling stations in Henry and adjoining counties.

Va., Pulaski—Atlantic Gas Co., Lewis Bldg., Philadelphia, Pa., advises expect to start construction of small gas plant and distribution system in June; construction by company's forces; not letting out any work for bids excepting pipe.

West Virginia—Hamilton Gas Co., 420 Lexington Ave., New York, reported, acquired control of West Virginia Gas Corp., Charleston, W. Va., owning and operating 52,000 acres and 115 producing wells in Logan, Cabell and Lincoln counties; and properties of Shonk Land Co., St. Albans Oil & Gas Co., comprising 21,000 acres gas territory.

West Virginia—Midland Natural Gas Co., E. R. Diggs, Director, 46 Cedar St., New York, John Eoghan Kelly, V. P., New York, reported, announced purchase of 16,000 acres oil and gas lands including 175 producing wells in West Virginia and Southwestern Pennsylvania; purchase includes following properties: Bridgeport Natural Gas Co., Harrison County, Clay District Gas Co., Monongalia County; Shannon Run Oil & Gas Co., Ritchie County; Swastika Gas Co., Monongalia County; Home Gas Co., Monongalia County; Aetna Gas Co., Ritchie County; Monroe & Laughlin Co., Monongalia County; Bridgeport Lamp Chimney Co., Harrison County; Carson Gas Co., Harrison County; Northwestern Gas Co., Harrison County; Darby Gas Co., Ritchie County; Conservative Gas Co., Harrison County; Ogden Gas Co., Harrison County; Hampton Gas Co., Harrison County; Cory Lick Gas Co., Harrison County; Vanetta Land Co., Fayette County; Gilco Oil and Gas Co., Gilmer County; Russell Gas Co., Lincoln County; Louchery Gas Co., Harrison County; Darby Gas Co., Ritchie County; Will-Rio Gas Co., Harrison County, all West Virginia; Conklin Gas Co., Greene County, Pa.; Fay-Headlee, Greene County, Pa.; Moore Tex Oil Co., Washington County, Pa.

West Virginia—Inland Utilities, Inc., Edw. R. Berry, V. P., under direction of Midland Management, Inc., reported, acquired 12 additional gas properties in West Virginia and Kentucky, total of 7110 acres, in Mingo, Wayne, Roane, and Calhoun Counties, W. Va., Floyd and Magoffin counties, Ky.; all gas being produced on these properties is being sold under contract to United Fuel Gas Co., 61 Broadway, N. Y.; Warfield Natural Gas Co., both subsidiaries of Columbia Gas & Electric Co., 61 Broadway, N. Y.; Kentucky-West Virginia Gas Co., subsidiary of Standard Gas & Electric Co., 231 S. La Salle St., Chicago, Ill.; Ohio Valley Gas Corp., Union Trust Bldg., Charleston, W. Va.; and Godfrey L. Cabot, Inc., Boston, Mass.

W. Va., Charleston—Cumberland Gas Corp., incorporated; C. F. Bauman, Union Trust Bldg.

Ice and Cold-Storage Plants

Ark., Fort Smith—F. Bourland, 1010 Grand Ave., has private plans in progress for ice station, N. Sixth and L St.; brick, concrete.

Ga., Montezuma—See Miscellaneous Enterprises.

La., New Orleans—Superior Pure Ice Co., Inc., G. N. Rathe, Pres., 940 N. Carrollton Ave., increasing capital to \$300,000 and 15,000 shares no par value.

N. C., Hickory—Carolina Stores, Inc., leased large warehouse; installing modern cold-storage plant for handling produce.

Okla., Oklahoma City—Monty Frow, 1120 N. Robinson St., started excavating for \$20,000 cold-storage plant, 720 W. Noble Ave.; 1 story, 50x135 ft.; to be complete in about 90 days; C. E. Huffman & Son, Gen. Contr., Southwest Natl. Bank Bldg.

Tex., Denton—City will call for bids for installing ice making machinery in municipal utilities plant.

Iron and Steel Plants

Mo., St. Louis—Columbia Iron Works, Inc., 425 Vista St., increasing capital \$18,000 to \$75,000.

W. Va., Weirton—Weirton Steel Co., Weirton, subsidiary of National Steel Corp., Grant Bldg., Pittsburgh, Pa., let contract to General Electric Co., Schenectady, N. Y., and Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., for motor equipment for \$3,500,000 rail and structural mill, involving approx. \$600,000; plant to be completed and in operation late in 1930.

Land Development

D. C., Washington—National Capital Park Planning Comn., Irving C. Root, Ch. Engr., develop Kensington Playground and recreation center.

Fla., Bradenton—Mainfold Land & Cattle Co., capital \$60,000, incorporated; A. F. Wyman, S. E. Harrison.

Fla., Boynton—South Florida Pineapple & Grove Corp. incorporated; V. G. Weaver, J. A. Baker.

Fla., Melbourne—R. H. Berg Co. incorporated; R. H. Berg, M. A. Peck.

Fla., Miami—Feuer Co., Inc., chartered; G. M. Okell, 31 W. Flagler St.

Fla., Miami—Grobian Properties, Inc., chartered; H. L. Everett, City Natl. Bank Bldg.

Fla., Plant City—E. W. Wiggins Co. incorporated; E. W. Wiggins, R. M. Morgan.

Fla., Jacksonville—Rebora Co. incorporated; W. L. Knight, 4322 Springfield Blvd.; H. Ragland.

Fla., Tampa—Glendale Land Corp. incorporated; H. S. Mott, 3016 Chapin Ave.

Fla., Zolfo Springs—H. G. Murphy, Inc., chartered; H. G. Murphy, J. Spence Murphy.

Ky., Lexington—Security Trust Co. developing Montclair Subdivision on south side of Tate's Creek Pike; Louis des Cognets & Co., 413 Main St., have contract for streets, sidewalks and sewers; will install water, gas, electric lines, etc.; expend \$100,000.

Ky., Louisville—Lincoln Field Golf Course, incorporated; Horace A. Taylor, 2019 Woodford Place.

Ky., Russell—Greenup County Land Co., Inc., capital \$20,000, incorporated; J. D. Atkinson, R. E. Wilson.

La., Alexandria—Rosenthal Realty Co., Inc., chartered; B. F. Rosenthal.

La., New Orleans—Murchison Realty Co., Inc., capital \$25,000, chartered; D. M. McDonald, 5401 Fontainebleau Drive.

La., New Orleans—Racme, Inc., capital \$100,000, incorporated; Edward Rightor, 12 Richmond Place.

Md., Baltimore—C. Edgar Wood, 5601 Hartford Rd., develop 18 hole golf course at Hartford Rd. and Bayonne Ave.

Md., Bethesda—National Woman's Country Club, Washington, D. C., has 150 acres on Bradley Lane, develop 75 acres for golf, tennis, swimming, etc.; work begun on golf stable; Fred Findlay, Golf Archt., 2600 Third Ave., Richmond, Va. 5-22

Miss., Tupelo—Country Club, S. P. Clayton, leased 140 acres; develop golf course; build clubhouse.

Mo., Kennett—J. A. Hemphill Farm Corp. incorporated; J. A. Hemphill, W. O. Fleener.

Mo., St. Louis—Gert-Ruth Realty & Investment Co., capital \$76,000, incorporated; Samuel Goldstein, 3714a Evans St.

Mo., West Plains—Ozark Dells Development Corp., capital \$21,000, incorporated; George Halstead, West Plains.

Mo., St. Louis—Art Henchen Co. incorporated; Mary M. Conway, 5851 Nine Place.

Mo., St. Louis—J. R. Morse & Co., Louderman Bldg., incorporated; J. R. Morse.

Mo., St. Louis—Martinique Co., 301 N. Grand Ave., incorporated; James S. Soleri, 529 N. Whittier St.

N. C., Charlotte—Realty Improvement Corp., capital \$100,000, incorporated; W. T. Hassell, 18 Westminster Place.

N. C., Greensboro—Green Valley Golf Club, Inc., chartered; L. B. Leftwich, Piedmont Bldg.

N. C., Morganton—Minosa Realty Co., capital \$100,000, incorporated; N. M. Patton, W. I. Davis.

Okla., Oklahoma City—City, E. M. Fry, City Mgr., reported, plans expending \$250,000 for improvements to parks, including swimming pool and bathhouse in Lincoln Park, lighting systems in several playgrounds and \$19,000 electric fountain in Northeast Lake.

Tenn., Chattanooga—North Missinoary Ridge Realty Co., Inc., capital \$400,000, incorporated; J. L. Foust, Hamilton Natl. Bank Bldg.

Tenn., Knoxville—Brookwalter Cemetery Co. incorporated; T. M. Pannel, 1816 E. Glenwood St.

Tenn., Memphis—Idlewild Peony Farms, Inc., capital \$50,000, chartered; W. H. Englehart, 252 East St.

Tex., McAllen—Borderland Orchard Co., H. L. Hawkins, Sec., has 320 acres; developing 200 acres for citrus orchard. 5-15

Tex., Troup—Troup Orchard Co., incorporated; J. T. Seay, J. D. Collier.

Tex., Victoria—A. W. Krueger and V. L. Griffin, develop 10 acre subdivision on Duach Lane.

Va., Richmond—Holy Cross Cemetery plans expending \$50,000 improvements to cemetery; erect ornamental entrance, etc.

Va., South Boston—Halifax County Golf Club, Inc., chartered; J. R. Haymes; develop golf course.

Lumber Enterprises

Ala., Jasper—Anthony Scott acquired Kee-ton-Massey Lumber & Mfg. Co.

Ark., Malvern—A. B. Cook Co. acquired Wisconsin-Arkansas Lumber Co., operating mill manufacturing oak flooring.

Ky., Greensburg—W. W. Williams erect planing mill and lumber plant to replace plant recently burned.

Mo., Springfield—A. D. Squires Lumber Co., 524 College St., acquired Landera Lumber & Cement Co., 480 N. Main St.

Mo., Springfield—Ozark Hardwood Lumber Co., 1740 N. Nettleton St., increased capital to \$150,000.

Miss., Laurel—G. C. Youngerman Lumber Co., First Natl. Bank Bldg., changing name to Youngerman-Reynolds Hardwood Co.

N. C., Asheboro—Asheboro Lumber Co., capital \$100,000, incorporated; D. A. Dorsett, Jason Vuncannon.

N. C., Asheville—Betty Lumber Co., capital \$100,000, incorporated; Lee I. Betty, N. Kensington Road, Lake View.

N. C., Greensboro—Geo. C. Brown & Co., Geo. C. Brown, Asst. Mgr., 1730 W. Lee St., plans rebuilding sawmill shed recently burned.

Tenn., Erin—N. E. Christianson started rebuilding planing mill recently burned.

Tenn., Martin—Hurt-Vowell Lumber Co., changing name to Vowell Lumber Co. and increasing capital.

Tex., Frisco—Lyon Gray Lumber Co. acquired Frisco Lumber Co.

Metal-Working Plants

Fla., Jacksonville—Continental Can Co., Inc., 1 Pershing Square, New York, concluded negotiations for acquiring motor export building, Grand Blvd. and Southern Ry.; soon install equipment and begin operations; employ about 160. 2-20

Mining

N. C., Burnsville—Wray Mining Co., capital \$25,000, incorporated; W. B. Wray, C. C. Caraway.

W. Va., Clarksburg—Master Marble Co., capital \$50,000, incorporated; Claude C. Grimmett, 316 North Ave.

Miscellaneous Construction

Ark., Fort Smith—City and Victor Ellig Post, American Legion, erect bronze war memorial statue at entrance to Lewis Tilles Children's Park.

Ark., Stuttgart—August Hoevels, Jr., and Mike McCuing, Atty., reported, plan rice elevator; 400,000 bu., 300x500 ft., 50,000 sq. ft. floor space.

D. C., Washington—District of Columbia, Maj. D. A. Davison, Asst. Engr. Commr., purchasing sites for modern trash incinerators; first to be located at 31st and K Sts., N. W.; second, square bounded by First, Second and O Sts., S. E.; total cost \$500,000; preliminary plans in progress, not to be ready for bids for several months; Metcalf & Eddy, Eddy Hill Park. 5-22

Fla., Miami Beach—City, C. W. Tomlinson, City Clk., opens bids June 4 for bulkheading and groynes, ocean front, 33rd to 43rd St.; cost about \$237,900; following estimating on general contract: R. G. Lassiter Co., S. W. Guth St.; N. J. Balestreir, Box 2546; Geo. E. Bunnell, 46 N. 27th St.; Burr Construction Co., 5424 Miami Ave.; Ebsary Foundation Co., 1050 Biscayne Blvd.; C. A. Taylor, 227 N. W. 22 Lane; M. F. Comer Bridge & Foundation Co., 1000 N. W. N. River Dr., and John J. Quinn Co., 116 N. E. 29th St., all Miami; G. O. Reed, Inc., 1345 20th St., Miami Beach; M. E. Hoffman Construction Co., Dania; Powell Bros., P. O. Box 2036, Fort Lauderdale; Shore Line Builders, Liggett Bldg., Jacksonville; E. A. Corson, Inc., Ocean City, N. J. 5-22

Fla., Miami—McNeil Marble Co., Olympia Bldg., Miami, and Jacksonville, has contract for constructing 3 private mausoleums, Woodlawn Park Cemetery, S. W. Eighth St., 2 costing \$15,000, third \$13,000.

Fla., Tampa—City plans constructing sea wall along river from Platt Street bridge to Davis Islands bridge.

Ky., Glen Springs—Kentucky Game & Fish Comsnn., Frankfort, opens bids June 12 for fish hatchery; consists of following approximate quantities: 18,000 cu. yd. power shovel excavation, 300 cu. yd. hand excavation, 350 cu. yd. Class A concrete, 30,000 lb. rein. iron, 500 lin. ft. 8, 10 and 12-in. culvert pipe, 500 lin. ft. 4 in. drain tile, 400 ft. 4 in. sewer tile, constructing barn 40x60 ft. over holding pools, keeper's residence containing 7 principal rooms and bath; Ed Rand, Engr., Vanceburg.

Md., Baltimore—Bd. of Awards, rejected bids for pedestrian underpass, Druid Hill Park; Winfield F. Courts, Park Engr., Druid Hill aPrk. 5-22

Miss., Hattiesburg—Pine Burr-Hattiesburg Area of Boy Scouts has plans in progress for swimming pool, Camp Major.

Miss., Laurel—City, Park and Playground Comsnn., let contract to L. A. Gily, N. Fifth Ave., at \$17,000, for swimming pool; cone, accommodate 500; install filter system; Paul Klyce, City Engr., P. O. Box 282.

N. C., Wrightsville Beach, Wilmington City, George E. Kidder, Mayor, let contract to Luther T. Rogers, 224 Princess St., Wilmington, for constructing wharf on south side of Banks channel trestle connecting Harbor Island and Wrightsville Beach, to accommodate pleasure craft and commercial cruisers.

Tenn., Memphis—U. S. Engr. Office, McCall Bldg., opens bids June 17 for constructing about 5,073,000 cu. yd. earthwork in Lower St. Francis, Upper Yazoo and Lower St. Francis Levee Districts, with yardage of 2,208,000, 1,865,000 and 1,800,000 cu. yd., respectively, designated as follows by piece, number, location (from Cairo R. D. below), kind of work, estimated cu. yd., height (feet): Lower St. Francis Levee Dist.—21, 80R, enlargement and new, 647,000, 6 to 19; 22A, 82R, enlargement, 306,000, 18 to 25; 22B, 83R, enlargement and new, 505,000, 15 to 24; 2525A, 166R, enlargement and new, 375,000, 16 to 25, 25B, 167R, 375,000, 16 to 22; Upper Yazoo Levee Dist.—29A, 273L, new and enlargement, 355,000, 21 to 24; 29B, 274L, new

loop, 550,000, 24 to 30; 29C, 275L, new loop, 450,000, 19 to 32; 29D, 284L, new and enlargement, 510,000, 18 to 29; Lower St. Francis Levee Dist.—26A, 233R, new and enlargement, 900,000, 19 to 27; 26B, 235R, new and enlargement, 900,000, 21 to 29.

Tex., Houston—Harris County-Houston Ship Channel Navigation Dist., E. M. Mour-sund, Engr., Court House, opens bids June 19 for constructing 7 additional yard tracks in port yard, 3.67 mi., and 2500 ft. track to serve grain elevator now under construction; \$107,700. 5-22

Va., Hopewell—Port and Dock Comsnn. and Chamber of Commerce selecting site for city dock.

Va., Newport News—Chesapeake & Ohio Ry. Co., C. W. Johns, Ch. Engr., Richmond, selected site for merchandise pier. 1-30

West Virginia—See Railways.

Miscellaneous Enterprises

Md., Baltimore—Firestone Tire & Rubber Co., 714 E. Pratt St., Baltimore, and Akron, Ohio, let contract to Consolidated Engineering Co., Inc., St. Paul and Franklin Sts., for \$250,000 to \$300,000 warehouse and 1-stop service station; 3 story, 233x84 ft., conc., steel, steel sash, plate glass front, conc. floors; complete master service station on first floor, including tire, greasing, washing, brake, battery and vulcanizing service; office and store on mezzanine; branch warehouse occupy second and third floors; to be occupied by Firestone Service Stores, Inc., of Baltimore; private plans. 8-8-29

Ala., Fairhope—Arvid McCue acquired bakery equipment and business of Gordon Lowell; plant being renovated and new machinery being installed.

D. C. Washington—O. J. Maigne Co., 356 Pearl St., New York, manufacturer of printers' rollers, taking bids for 3-story plant in connection with other buildings, 2218 Georgia Ave.

D. C., Washington—U. S. Bureau of Standards authorized to construct \$350,000 national hydraulic laboratory; President signed bill; funds probably will be made available by Congress for use July 1, laboratory to be complete and operations to start during 1931; plans under way, under direction of H. N. Eaton, of Bureau of Standards, to be complete in fall.

Fla., Melbourne—Nicholas Larson, Waukegan, Ill., acquired site, Melbourne Ave.; establish boat building plant in Fall; erect residence; beautify waterfront, construct retaining wall, make fill and erect boat house.

Ga., Atlanta—Progressive Farmer Ruralist Co. being formed by merger of Southern Ruralist, Atlanta, and Progressive Farmer, Birmingham, Ala., both publishing farm papers, effective Sept. 1; Clarence Poe, Pres., Progressive Farmer Co., Raleigh, N. C., to head new corporation.

Ga., Montezuma—Tom Huston, Inc., completed final plans for \$100,000 plant to preserve peaches, figs and other fruits and vegetables by freezing process; 60x200 ft., brick, steel; to be in operation about July 1; W. R. Tucker, Agricultural Development & Immigration Act., Birmingham & Coast R. R. Co., 26 Cain St., N. W. Atlanta, interested.

Ky., Horse Cave—Horse Cave Tobacco Warehouse Co., capital \$40,000, incorporated; S. L. Duncan, J. M. Thompson.

Ky., Lancaster—Garard Tobacco Warehouse Co., capital \$25,000, incorporated; W. R. Kelley, H. C. Kauffman.

Ky., Louisville—Lee & Sullivan Brick Contracting Co. changing name to J. J. Lee Brick Contracting Co.

Ky., Lexington—Spotswood Specialty Co., A. T. Linney, V. Pres. and Gen. Mgr., 218-222 Jefferson St., manufacturer of advertising specialties, plans addition to plant, adding 3480 sq. ft. floor space; additions include structure 21x170 ft. and basement under 1/2 of plant for storage.

La., Bogalusa—Bogalusa Paper Co., Inc., R. H. Laftman, V. Pres. and Gen. Mgr., advises regarding reports that company is expending a large sum for enlarging plant, "We did let contract for a small building some time ago, but the contract price for the building was less than \$10,000." 4-17

La., Houma—Dept. of Agriculture, Washington, D. C., opens bids June 6 for furnishing all materials for superstructure and alternately, including erecting greenhouse.

La., New Orleans—United Automobile Insurance Co., Inc., capital \$200,000, chartered; Julius H. Wiener, Hibernia Bldg.

La., Shreveport—Jersey Gold Creameries, Inc., chartered; C. C. Crosslin, 5615 Alta St., Dallas, Tex.; I. Woodard, 1525 Slattery Bldg., Shreveport.

Mo., Kansas City—Kansas City Oxygen

Gas Co., 2012 Grand Ave., acquired site for plant; initially expend \$150,000, later enlarge plant; 1 story, with footings for second floor over part of area, fireproof; Charles A. Smith, Archt., 800 Finance Bldg.

Mo., Poplar Bluff—Poplar Bluff Printing Co., J. H. Wolpers, Pres., has plans complete for \$25,000 newspaper building, Pine St. and Broadway; 1 story, basement, 33x83 ft., rein. conc. floor slab, stone trim, conc. foundation, comp. roof; Bonsack & Pearce, Archt., 411 Olive St., St. Louis.

Mo., Springfield—Swift & Co., 600 N. Campbell St., Springfield, and Union Stock Yards, Chicago, Ill., let contract to H. T. Myers, 521 E. Monroe St., for \$15,000 plant addition; add second story to present 1-story building; brick, frame; private plans.

Mo., Springfield—Frank R. Smith Laundry Co., 512 Booneville St., let contract to W. W. Johnson, 301½ College St., for \$15,000 remodeling; 1 and 2 story, basement, brick, stucco, terra cotta; general contractor taking bids on all sub-contracts; Eugene F. Johnson, Archt., McDaniel Bldg.

Mo., St. Louis—T. Mussey, Wainwright Bldg., erecting film exchange, 3203 Olive St.; 1 and 2 story; Paramount-Lasky Corp., Lessee, 2721 Washington St.; Geo. Moeller Construction Co., Gen. Contr., 3520 Itasca St.; O. Krieg, Archt., Wainwright Bldg. 5-8

Mo., St. Louis—Eden Publishing House, J. P. Hennings, Mgr., 1712-18 Chouteau Ave., let contract to A. H. Haeseler Building and Contracting Co., Wainwright Bldg., for remodeling present building and erecting large addition, Chouteau Ave. and Dolman St., involving \$200,000; steel frame, conc., rein. conc. floor slabs, brick, terra cotta; install tube systems, conveyors and high speed elevators; C. H. Euler Electric Co., 4733 Manganfield St., has electrical contract; Eichler Heating Co., Ry. Exch. Bldg., heating; Hoener, Baum & Froese, Archts., 3635 Laclede St. 12-19-29

Mo., St. Louis—Sunshine Family Laundry Co., 2328 Rutgers St., has plans complete for laundry addition, 2348 Rutgers St.; 1 story, basement, 50x100 ft., brick, rein. conc., conc. foundation, comp. roof; Edward J. Lawler, Archt., 3672 Hickory St.

Mo., St. Louis—Matafoils, Inc., capital \$20,000, chartered; Harry C. Avis, 5142 Waterman St.; tin, tinfoil, aluminum, aluminum foil, sheet metal, metal sheeting, etc.

N. C., Charlotte—Aetna Insurance Co., Ralph B. Ives, Pres., Hartford, Conn., acquired Piedmont Fire Insurance Co., Piedmont Bldg.

N. C., Charlotte—Observer Printing House, Inc., 29 S. Church St., erect \$200,000 plant.

N. C., Greensboro—Hunt Bros., Inc., capital \$100,000, chartered; J. M. Hunt, Lindley Park; plumbing.

N. C., Hendersonville—Southern Tobacco Co., capital \$50,000, incorporated; J. A. Belts, Third Ave., W.

S. C., Greenville—State Mutual Fire Insurance Co., Walker Bldg., formed with E. Roy Stone, Pres.; W. D. McMurray, Secy.

Tenn., Chattanooga—Southern Dairies Co., Inc., L. J. Wilhoite, Dist. Mgr., 14 E. Seventh St., plans erecting modern ice cream plant; expend over \$100,000 for expansion in city.

Tenn., Chattanooga—N. C. Blanchard Co., manufacturer of golf shafts and implement handles, plans manufacturing brooms on large scale.

Tenn., Kingsport—Kingsport Press, Inc., E. W. Palmer, Pres., installing several new presses and additional bindery equipment; plans and specifications drawn for additional press room unit, but will not undertake construction for some months and only as space requirements compel.

Tenn., Memphis—Consolidated Contractors, Inc., chartered; I. W. Crabtree, Bank of Commerce Bldg.

Tenn., Nashville—American Mutual Insurance Co. of Nashville, Benbow-Dillon Bldg., formed with E. G. Sharp, Pres.; George L. Hicks, Secy.-Treas.

Tenn., Nashville—United States Tobacco Co., 11th and Harrison St., raze present 1-story building and erect \$20,000 plant; 6 story, 26x40 ft., comp. roof, steel sash, wire glass, conc. floors, conc. foundation, freight elevator, fire escapes, sprinkler system; private plans.

Tex., Austin—City, Adam R. Johnson, Mgr., opens bids June 3 for \$62,000 abattoir, East city limits on H. & T. Ry.; 2 and 3 story, fireproof, rein. conc. foundation, frame, hollow tile, brick, metal lath and plaster, tar and gravel roof, conc. and brick floors, metal sash; separate bids on refrigeration machinery and installing heating, including boilers

and steam piping, plumbing and wiring; H. F. Kuehne, Supvg. Archt., Littlefield Bldg.; M. L. Diver, Struc. and Mech. Engr., Calcasieu Bldg., San Antonio. 5-8

Tex., Dallas—O'Shea Shirt & Fold Co., capital \$50,000, incorporated; Otto Herold, Stoneleigh Court.

Tex., Dallas—Klein Bros. Co., capital \$100,000, incorporated; J. J. Klein, 4617 Live Oak St., construction contractors.

Tex., Dallas—Biltmore Conservation Corp., 5360 Melrose Ave., Los Angeles, Calif., has contract for collecting wet garbage; erect reclamation plant. 5-15

Tex., Harlingen—William L. Trammell started erecting \$300,000 bakery, W. Harrison St.; 144x212 ft., tile, stucco, cut stone; install 75-ft. \$30,000 traveling oven; operate 16 trucks.

Tex., Sonora—Sonora Wool, Warehouse & Mohair Co., capital \$50,000, incorporated; Ed C. Mayfield, W. A. Miers; maintain wool and mohair concentration warehouse for assembling and selling these products.

Va., Abingdon—Bernard-Vann Co., Inc., capital \$150,000, chartered; J. S. Bernard, Greenville, Tenn.; looseleaf tobacco warehouse.

Va., Buffalo Lithia Springs—Virginia Buffalo Springs Corp. increasing capital, \$400,000 to \$2,400,000.

Va., Fredericksburg—Sylvania Industrial Corp., 122 E. 42nd St., New York, changing name to Fredericksburg Industrial Corp.; soon complete plant to manufacture transparent paper. 11-14-29

Va., Front Royal—Front Royal Apple Packers Corp., capital \$25,000, incorporated; H. W. Pomeroy.

Va., Nokesville—Filippi Animal Trap Co., Inc., capital \$50,000, chartered; Massimo Di Filippi; manufacture animal traps, etc.

Va., Norfolk—Chero-Cola Bottling Corp. of Norfolk, J. B. Johnson, Pres., 708 W. 24th St., changing name to Norfolk Nehi Bottling Co., Inc.

Va., Norfolk—Nestor, Inc., chartered; O. K. Nestor, 737 Maryland Ave., builders, contractors, decorators.

Va., Richmond—Virginia Bridge & Iron Co., Roanoke, has contract for struc. steel for \$2,000,000 first unit of Cellophane plant of Du Pont Cellophane Co., The Park Ave. Bldg., 32nd and 33rd St. and Fourth Ave., New York; Dupont Engineering Co., Gen. Contr., Wilmington, Del. 5-1

Va., Richmond—L. B. Jenkins Tobacco Co., Inc., capital \$200,000, chartered; Guy B. Hazelgrove, American Natl. Bank Bldg.

Va., Richmond—L. B. Jenkins Tobacco Co., Inc., capital \$200,000, chartered; Guy B. Hazelgrove, American Natl. Bank Bldg.

Motor Bus Lines and Terminals

Ala., Mobile—School Board ordered 25 bus bodies from Wayne Works, Richmond, Ind., for use in Mobile County rural transportation system; to be placed in service in September.

Arkansas—Following applied to Arkansas Railroad Coms., Little Rock, for permission to operate bus passenger lines: Charles Maxwell, 1121 N. 11th St., Fort Smith, to operate over highways 45 and 99, Fort Smith to Siloam Springs and return, serving all intermediate points, and over Highways 16 and 23, Fayetteville to St. Paul and return; Frank Witt, Fayetteville, to operate on Highway 16, Fayetteville through Elkins, Thompson, Delaney, to St. Paul, and over Highway 23, St. Paul through Cass to Ozark; A. L. Pevhouse, Mansfield, over Highway 71, Fort Smith to Mansfield and return.

Ky., Paducah—Smith Motor Coach Co., Frederick Smith, Washington and Front St., Memphis, Tenn., let contract to F. A. Cory, care Jno. A. Dennie & Son, 373 Adams Ave., Memphis, Tenn., for garage; 1 story, 173x86 ft., comp. roof, misc. steel and iron, conc. and wood floors; Jones & Furbinger, Archt., Porter Bldg., Memphis. 4-17

Tennessee—Smith Motor Coach Co., 144 N. Front St., Memphis, Tenn., applied to State Railroad and Public Utilities Coms., for permission to operate buses over State Highways 15 and 5 to Mississippi line just above Corinth, Miss.; for permission to run buses between Henderson and Savannah and for approval of leases given R. M. Kard and Stanley Martin for operation of S. & W. Line, in which Smith company owns controlling interest.

Tenn., Jackson—Smith Motor Coach Co., Frederick Smith, Pres., Washington and Front St., Memphis, has plans in progress for garage; 1 story, brick, rein. conc., comp.

roof, conc. floors, misc. steel and iron; Jones & Furbinger, Archt., Porter Bldg., Memphis.

Tenn., Memphis—H. H. Carroll, 302 S. Avery Pl., has preliminary plans in progress for bus station, Third and Georgia St.; 1 story, 120x160 ft., comp. roof, steel trusses, steel sash, brick, rein. conc.; E. L. Harrison, Archt., Fidelity Bank Bldg.

Tex., Del Rio—Mexican Motor Coaches soon open bus line between here and Alpine.

Va., Fredericksburg—Richmond Greyhound Lines, Inc., 412 E. Broad St., Richmond, authorized by State Corporation Coms., Richmond, to operate passenger buses between Fredericksburg and Colonial Beach, on Potomac River.

Railways

Fla., Fort Lauderdale—Broward County Port Authority let contract to Maule Ojus Rock Co., 37 N. E. First Ave., Miami, at \$69,118.65, for constructing Port Terminal R. R., extending from municipal slips to Port Everglades to point 3/4 mi. south and thence westward to cross Florida East Coast and Seaboard Air Line, 4 1/2 mi. long. 4-24

Ky., Williamstown—Bates & Rogers Construction Co., C. V. Burghart, V-Pres., Gen. Contr., 111 W. Washington St., Chicago, Ill., advises regarding railroad work of Cincinnati New Orleans & Texas Pacific Ry. Co., subsidiary of Southern Ry., B. Herman, Ch. Engr., Washington, D. C., between Williamstown and Sadieville, "This is continuation of work we have been doing for Southern Ry. for past 2 years and work is being handled with our own forces." 5-15

La., Lockport—Texas & New Orleans R. R. Co., R. W. Barnes, Ch. Engr., Houston, Tex., subsidiary of Southern Pacific Lines, completing plans for 5-mi. extension of present branch line between Raceland Junction and Lockport; soon apply to Interstate Commerce Coms., Washington; started constructing 6-mi. extension of Houma branch to Ashland plantation, both to be completed in 1930; cost of both \$200,000. 12-12-29

Tex., Amarillo—Atchison, Topeka & Santa Fe Ry. Co., G. W. Harris, Ch. Engr., Chicago, Ill., plans constructing line, Amarillo to Boise City, Okla., this summer; contract to be let in few weeks. 5-8

Tex., Corpus Christi—Corpus Christi, San Angelo & Roswell Ry. Co. being formed with H. H. Halverston, Pres.; Edward Kennedy, V.-Pres., 1014 Austin Ave.; W. V. Kennedy, Secy., and J. M. Wilson, Treas., all Houston; construct railroad between deep water port of Corpus Christi, and Roswell, N. M., approx. 725 mi.; plans call for constructing first of line, Corpus Christi to San Angelo, about 375 mi. (See San Antonio, 12-19-29)

Va., Newport News—See Miscellaneous Construction.

Va., Roanoke—Norfolk & Western Ry. Co., C. Cocke, Pur. Agt., ordered 500 tons rails from Bethlehem Steel Co., Bethlehem, Pa.

West Virginia—Chesapeake & Ohio Ry. Co., C. W. Johns, Ch. Engr., Richmond, Va., applied to Interstate Commerce Coms., Washington, for permission to construct 5 mi. new line, West Gilbert into Mingo County, to serve extensive coal lands in Guyandotte River area.

West Virginia—Virginian & Western Ry. Co., subsidiary of Virginian Ry. Co., A. M. Traugott, Ch. Engr., Norfolk, Va., opens bids June 2 for 7-mi. line, including 1200-ft. tunnel; extension of 7-mi. line now under construction by Boxley Bros. Co., Inc., Gen. Contr., Orange, Va., extending from point 6 mi. from Pineville to Boxleyville; \$550,000, 7-mi. line under construction consists of ordinary cut and fill work with small masonry opening, except for 3 tunnels about 900, 600 and 400 ft.; all heading taken in 900-ft. tunnel and work under way in headings of other tunnels; open grade and masonry 60 to 65% completed; line to be completed about Oct. 1; F. C. Sammons Co., Huntington, and Sutton Co., Inc., Pineville, have contracts for open grade and 1 tunnel; completed branch line to run, Elmore to Logan, 43 mi. 10-17-29

W. Va., Wheeling—Baltimore & Ohio R. R., H. A. Lane, Ch. Engr., Baltimore, Md., J. M. Scott, Gen. Supt., Wheeling Div., started installing automatic signal system on line, Glenwood to Wheeling; expend \$1,200,000; program will include double-tracking, extending signals and installing automatic signals; 1 single track and 12 double track signal bridges; extend bridge masonry where necessary; siding extensions.

Roads, Streets and Paving

In connection with **LAND DEVELOPMENT** large sums are expended for roads, streets, paving and sidewalks. Details will be found under that classification.

Proposed Construction

Ala., Huntsville—Madison County Comms., plan receiving bids to pave Fifth St. from city limits through Dallas to Oakwood Ave., and Oakwood Ave. through Dallas and Lincoln to intersection of Meridian Pike; conc. 18-ft. wide.

Ark., Russellville—City Council plans repaving about 2 mi. Main St., estimated cost \$46,000; work probably begin in June. See Financial News Columns.

Ark., Russellville—Pope County and Forest Reserve will grade and gravel surface 11 mi. Hector-Okay road, jointly, with own respective forces; work in Forest Reserve under supervision of H. R. Koen, Forest Supvr.; J. Q. Hill, Judge. 5-22

Fla., Pahokee—City plans street repair and sidewalks. See Financial News Columns.

Fla., Jacksonville—Duval County Comms., Frank Brown, Clk., receive bids June 2 for grading approaches to bridges at Ribault River (Six Mile Creek) and Bear Creek, on Road No. 24, Pickett Road, 4,468 cu. yd. excavation.

Fla., Tampa—City, D. B. McKay, Mayor, considering relaying Grand Central Ave., from Hyde Park to Howard Ave., cost about \$19,000; repave Fourth Ave., Thirteenth to Thirty-sixth St., cost about \$16,232; also considering 2 paving projects in Ybor City section: Fill and paving on Twenty-sixth St., First Ave. to DeSoto Park, cost \$29,400; pave Fifteenth St., Michigan to Twenty-first Ave., \$6900. 4-10

Ga., Waycross—Ware County Comms., D. A. Woodward, Commr., plan improving highways leading to rural schools.

La., Columbia—Caldwell Parish Police Jury receives bids June 6 for 2 gravel roads: 7½ mi. Columbia-Copenhagen; 3½ mi. Columbia-Hough Bend.

La., Lake Charles—City Coms., Council, Leon Locks, Mayor, receives bids June 2 for resurfacing with rock asphalt, Broad St., Ryan to Boulevard; paving with conc., Lawrence St., Moss to Ford St.; T. H. Mandell, City Engr.

La., Many—Louisiana Highway Coms., Baton Rouge, receives bids June 24 for furnishing gravel and surfacing 7.9 mi. Route 6, Many-Texas Highway; H. B. Hendler, State Highway Engr.

Maryland—State Roads Coms., Baltimore, receives bids June 3 for 7 roads and bridges: Baltimore County—1.4 mi. conc., from end of conc. east of Monkton to Shepperd, Cont. B-131-44; Charles County—1.5 mi. gravel, from Hughesville toward Burnt Store, Cont. Ch-84-82; Harford County—1.77 mi. conc., from Aberdeen to Swan Creek, Cont. H-77-43; Howard County—1.2 mi. conc., Old Frederick road, from Wheelwright's gate to St. Johns lane, Cont. H-77-52; Prince George's County—1.5 mi. conc., Central Ave., Berwyn, from Baltimore-Washington Blvd. to Edmondston road, Cont. P-115-32; Somerset County—6.72 mi. conc. shoulders, from Crisfield to Marion, Cont. S-43-111; St. Mary's County—2.1 mi. gravel, Chaptico-Clements road, from end of Cont. SM-35 to Cont. SM-44, Cont. SM-65-84; Talbot County—conc., slab bridge over Norwich Creek, under Pennsylvania R. R. bridge at Queen Anne, Cont. T-37-25; G. Clinton Uhl, Chmn.

Maryland—State Roads Coms., Baltimore, received low bids for 8 roads: Anne Arundel County—2.59 mi. conc., end of conc. north of Severn Cross Roads, toward Iglesias, Caton Construction Co., Halethorpe, Md., \$46,845; Baltimore County—1.01 mi. conc., Falls road, end of Cont. B-111 north, P. Reddington & Sons, 2 E. Lexington St., Baltimore, \$35,118; Garrett County—1.97 mi. conc., from Loch Raven toward Gorman, Cumberland Contracting Co., Valley St. Bridge, Cumberland, \$46,890; Harford County—3 mi. penetration macad. and macad. surfacing, from Churchville toward Priest Ford Bridge and from Churchville toward Creswell, T. B. Gatch & Sons Contracting and Building Corp., 5937 Belair Road, Baltimore, \$44,777; Prince George's County—1 mi. conc., Powder Factory road, from Baltimore-Washington Blvd., at Beltsville toward Montgomery County line, Caton Construction Co., \$20,640; .44 mi. hot or cold bit. mixture surface, Rhode Island Ave., Barney St. to Dist. Line, Highway Engineering & Con-

struction Co., Seventh and T St., N. W., Washington, D. C.; Wicomico County—1.40 mi. penetration macad. surfacing, on reconstructed slag base, from Sharpstown toward Delaware State Line, Layfield & Waller Paving Co., Salisbury, \$18,515; G. Clinton Uhl, Chmn. 5-15

Md., Baltimore—City, Bd. of Awards, received low bid from L. Pedro, 1249 E. Eager St., \$29,225, for paving footways in Cont. No. 117; Nathan L. Smith, Highways Engr.

Md., Baltimore—City, Bd. of Awards, receives bids June 4 to grade, curb and pave with sheet asphalt streets in Cont. No. 555: 14,500 sq. yd.; Nathan L. Smith, Highways Engr.

Md., Oldtown—Allegany County Road Directors plan about 1 mi. hard surface road from Western Maryland Station, Oldtown, through village of Oldtown.

Md., Baltimore—City, Bd. of Estimates, approved widening and grading Monastery Ave., from Caton Ave., southwesterly; opening and grading Plainfield Ave., Furley to Woodlawn Ave., and Venable Ave., Westerwald Ave., to Frisby St.; expending \$65,000 to pave Broening Highway from Holabird Ave. to point south of Keith Ave.; will pave Ponca St., O'Donnell to Boston; Nathan L. Smith, Highways Engr.

Md., Baltimore—City, Wm. F. Broening, Mayor, plans expending \$2,000,000 for road and bridge building. See Financial News Columns.

Miss., Bay St. Louis—State Highway Dept., Jackson, plans hard-surfacing 11 mi. Short Line Highway, between New Orleans and Mississippi coast, from Pearlington, Hancock County, to Louisiana line, connecting directly with Chef Menteur-Rigolets free bridges; Louisiana Highway Coms., Baton Rouge, will pave road from free bridges to Mississippi line.

Miss., Hazlehurst—City Council plans paving East Railroad Ave. from city hall site to Monticello St.; sold bonds.

Miss., Walthall—Webster County Bd. of Suprvs. engaged W. C. Lindley, Road Constr. Engr., Belzoni, to supervise \$350,000 road graveling project; bids received soon. 4-24

Missouri—State Highway Coms., Jefferson City, receives bids June 3 for 56 roads and 41 bridges: Atchison County—3,030 and 3,427 9-ft. conc., Fairfax-Holt County, 21,180 cu. yd. excavation, 36,106 sq. yd. paving; Holt County—3,315 and 3,199 mi. 9-ft. conc., Atchison County south, 28,244 cu. yd. excavation, 26,250 sq. yd. paving; Caldwell County—112 mi. 18-ft. conc. near Nettleton, bridge over St. P. & K. C. S. L. R. R.; Clinton County—3,181 mi. 14-ft. crushed stone or gravel, Lathrop-Turner road, 9579 cu. yd. excavation; Harrison County—3,840 mi. 14-ft. gravel, Route 69-Ridgeway, 21,890 cu. yd. excavation, 60,150 lb. struct. steel; bridge over West Fork of Big Creek, I-beam; Nodaway County—4,305 and 1,350 mi. 18-ft. gravel, Route 71-West, 11,357 cu. yd. excavation, 6920 cu. yd. paving; 3,323 and 4,186 mi. 18-ft. gravel, Junction Route 18 north, 46,922 cu. yd. excavation, 9400 cu. yd. paving.

In Marion County—881 mi. 20-ft. conc., Route 61-Mark Twain Ave., 14,203 cu. yd. excavation, 11,208 sq. yd. paving; Monroe County—2,543 and 2,613 mi. 18-ft. gravel, Randolph County-Madison, 90,348 cu. yd. excavation, 6477 cu. yd. paving; Ralls County—1,458 mi. 16-ft. gravel, Perry-Sante Fe, and 1,676 mi. 16-ft. gravel, Route 19-west, 23,641 cu. yd. excavation, bridges over branch and Lick Creek, I-beams; Henry County—3,095 mi. graded earth, Leeton-Windor, 33,005 cu. yd. excavation, bridges over Tabo, Mission and Dry Creeks; Lafayette County—3,428 mi. 12-ft. crushed stone, Wellington-Odessa, 10,620 cu. yd. excavation, 8891 cu. yd. paving; bridge over Little Sni-a-bar creek, I-beams; Boone County—4,451 mi. 16-ft. gravel, Route 63-Hartsburg, 33,003 cu. yd. excavation; Miller County—4,923 mi. 16-ft. gravel, Route 17-Ulman, 2,608 mi. 18-ft. gravel, Cotton Spur-Damsite, and 2,993 mi. 18-ft. gravel, Morgan County-Elden, 230,240 cu. yd. excavation, 9984 cu. yd. paving; bridges over Blue Springs Creek, Gier Branch, and South Fork of Moreau River.

In Morgan County—2,381 mi. 18-ft. gravel, Barnett-Miller County, 24,224 cu. yd. excavation; Osage County—2,898, 2,870 and 2,878 mi. 20-ft. conc., East and West, 70,017 cu. yd. excavation, 102,159 sq. yd. paving; bridges over Laughlin and Linn Creeks; Gadsden County—3,317 and 3,377 mi. 18-ft. gravel, Hermann south, 140,279 cu. yd. excavation, 8435 cu. yd. paving; 3,340 mi. 18-ft. gravel, Hermann south, 56,210 cu. yd. excavation; bridges over Frene Creek; St. Louis County—2,435 20-ft. conc. or bit. macad. River des Peres-Route 77, 30,604 cu. yd. excavation, 28,556 sq. yd. bit. macad. or 29,621

sq. yd. conc.; 2,079 mi. 40-ft. conc. Big Bend road, River des Peres, 25,643 cu. yd. excavation, 48,424 sq. yd. paving; 2,472 mi. 20-ft. conc. or bit. macad. Pattonville-St. Louis, 20,704 cu. yd. excavation, 28,871 sq. yd. bit. macad., 33,331 sq. yd. conc.; bridges over Deer Creek, West Branch of River des Peres, over Coldwater, Dawson and Post Creeks.

Dade County—4,282 mi. 16-ft. gravel, Route 12-Dadeville, 15,866 cu. yd. excavation, bridge over Carlock Branch; Dallas County—3,512 and 4,670 mi. 20-ft. conc., Hickory County-Louisburg, 73,164 cu. yd. excavation, 84,260 sq. yd. paving; bridge over branch of Cahoochie Creek; Hickory County—3,372, 2,689 and 3,037 mi. 20-ft. conc., Preston North and South, 128,342 cu. yd. excavation, 160,211 sq. yd. paving; Phelps County—3,708, 4,209 and 2,975 mi. 20-ft. conc., Lebanon-Rolla, 96,932 cu. yd. excavation, 127,765 sq. yd. paving; Carter County—2,857, 2,447, 3,479 and 886 mi. 18-ft. gravel, Fremont-Van Buren, 159,097 cu. yd. excavation, 12,029 cu. yd. paving; bridges over Roaster Hollow, Dry Valley, Pocahontas Hollow, Ratcliffe Hollow.

In Reynolds County—1,749 mi. 16-ft. gravel, Centerville-Iron County, 50,928 cu. yd. excavation; 645 mi. 16-ft. gravel, Ellington-south, 14,487 cu. yd. excavation; bridges over West Fork of Black River, over Hunter and Brooks Hollows; Butler County—402 mi. 18-ft. conc., through Fisk, 33,440 cu. yd. excavation; Stoddard County—254, 3,482, 4,205 mi. 18-ft. conc., Dudley-Dexter and from St. Francis River east; over overflows, Red Dredged Creeks, drainage ditch; Cape Girardeau County—3,019 and 2,242 mi. 30-ft. graded earth, Dutchtown-Cape Girardeau, 91,734 cu. yd. excavation, 63,300 lb. struct. steel, bridges over Job's, Little Ramsey Creeks, etc.; T. H. Cutler, Ch. Engr.

Mo., Clayton—St. Louis County receives bids June 4 to improve Sutter Ave.; also improve North and South road in University City; Roy Jablonsky, County Highway Engr.

Mo., Jefferson City—City receives bids June 2 for cement conc. pavement on Walsh St. from Dunklin St. south, 1,469 cu. yd. excavation, 1450 sq. yd. cement conc. pavement, cement conc. curb; cement conc. pavement in block between McCarty-Miller-Lafayette and Cherry St.; 850 sq. yd. cement conc. pavement; F. E. Ross, City Engr.

Mo., Kansas City—City, Bd. of Public Works, Matthew S. Murray, Dir., considering widening Fifteenth St., 29½ ft. from Campbell to Grand, and 49½ ft. Grand to Baltimore Ave.

Mo., St. Louis—City, Bd. of Public Service, received low bids for paving and repaving various streets; Repave Broadway with recut granite blocks, Morin to Calvary Ave., Stiers Construction Co., 944 Magazine St., \$142,230; Sullivan Ave., asphalt, Prairie to Clay Ave., Flinn Paving Co., 1405 S. First St., \$38,639; Seventeenth St., asphalt, Pine St. to Washington Ave., Flinn Paving Co., \$13,345; Kennerly Ave., asphalt, Sarah to Whittier St., C. A. Moreno Co., \$8,672; Greer Ave., asphalt, Prairie to Clay, Granite Bituminous Paving Co., Ry. Exch. Bldg.; Channing Ave., Warrente bitumilic, Locust St. to Franklin Ave., Granite Bituminous Paving Co., \$18,422; Cupples Place, asphaltic conc., Marcus Ave. to alley, Asphalt Paving Co., 1328 Sublette St., \$7,362; W. W. Horner, City Engr. 5-8

Mo., St. Louis—City, Bd. of Public Service plans widening High St., extension of Twelfth Blvd., to 100 ft.; W. W. Horner, City Engr.

Mo., Springfield—City plans paving Wall St., Main to Missouri; S. R. Fisher, City Engr.

Mo., St. Joseph—City Bd. of Public Works, plans paving alleys between Lafayette and Olive and Howard and Jones St.; also paving Lafayette St.; C. T. Miller, City Engr.

North Carolina—State Highway Coms., Raleigh, receives bids June 17 for 9 roads and 2 bridges: Pitt County—10 mi. paving, Route 301, Greenville to Vanceboro; Rockingham County—2 mi. grading, and bridge over Dan River, Madison, Routes 708 and 704; Iredell County—6 mi. grading, topsoil and structures, from Harmony, Route 26 to connect with Route 10; Anson County—5 mi. grading, structures, and topsoil, Route 802, Morven to South Carolina line; Mecklenburg County—11 mi. grading, structures, topsoil, Route 262, from outside Charlotte to Union County line; Union County—9 mi. Route 262, Mecklenburg line to Waxhaw; Forsyth County—7 mi. paving, Waughtown to Kernersville; Watauga County—10 mi. Route 80, Deep Gap to Boone; Wilkes County—10 mi. gravel and stone surface, Route 60; Durham County—bridge over Southern Ry., Route 751, connecting Routes 75 and 10, via Duke University; Surry County—

CONSTRUCTION DEPARTMENT

Manufacturers Record

overhead bridge at Pilot Mountain, on new road being built from Pilot Mountain to Dobson; John D. Waldrop, State Highway Engr.

N. C. Charlotte—City, R. W. Rigsby, Mgr., receives bids June 3 to resurface with asphalt 15 streets, avenues and roads, including West Trade, North Church St., Worthington, Euclid and Cleveland Ave., Bormley road.

N. C. Winston-Salem — City, Harry L. Shaner, Commr. of Public Works, and Forsyth County plan 13,000 lin. ft. hard surfaced highway in Winston-Salem; extend Lockland Ave., and build link road, from Sutton St. across Lockland, via incinerator, to Miller St.; pave Miller St. to city limits.

Oklahoma—State Highway Comsn., Oklahoma City, received low bids for 7 roads and 2 bridges: Love County—14.7 mi. U. S. Highway No. 77, Marietta to Red River, Ward-Beekman & Co., 1801 E. Ninth St., Oklahoma City, \$98,043, for standard, and \$110,026 for alternate specifications; Carter and Love Counties—9.45 mi. U. S. Highway No. 77, Standard Paving Co., 2119 E. Eleventh St., Tulsa, \$254,742, standard, \$279,380, alternate; Garvin County—6.9 mi. U. S. Highway No. 77, Wynnewood to Pauls Valley, Standard Paving Co., \$113,826, standard, \$123,427, alternate; combination of preceding projects and 9.34 mi. U. S. Highway No. 77, Pauls Valley to McClain County line, Gibson & Gibson, Pauls Valley, \$297,032, bridge, J. S. Woods & Son, Edmond, \$11,750; 9.34 mi. Pauls Valley to McClain County line, Tom Collins, Cushing, \$153,083, standard, \$167,279, alternate; bridge, Mackey & Hopper, Liberty Natl. Bldg., Oklahoma City, \$33,694; Bryan County—12.6 mi. U. S. Highway No. 75, Durant to Red River, Highway Construction Co., Daniels Bldg., Tulsa; Logan County—8 mi. 18-ft. wide, west from Guthrie, on State Highway No. 33, Tom Collins, \$141,226, A. R. Losh, State Highway Engr. 4-24

Okl., Fairview — Major County Commsr. appropriated \$300,000 toward building Highway No. 47, 164 and 8.

Okl., Okmulgee — Okmulgee County considering improving 7 mi. Highway No. 27 east and west of Morris.

Okl., Oklahoma City—See Bridges, Streets, Paving.

Okl., Newkirk—Kay County Commsr. receive bids May 31 for graveling 6 roads, and constructing 4 bridges; 2 mi. road north of Kaw City; 1 1/4 mi. road, from Cross to Ponca City's municipal airport; 3 mi., connecting two gravel highways north of Ponca City; 1 mi. road, connecting Maryland and Wenz highways; 4 mi., west from pavement south of Tonkawa; 1 1/2 mi. road, from Nardin to cemetery; bridges include: 60-ft. steel truss over Bois D'Arc creek, south and west of Newkirk; 32-ft. I-beam over Stub Creek, northeast of Kaw City; bridge on Kaw Scenic Highway; bridge on highway to "Pioneer Woman" statue; J. S. Clark, County Engr.

Okl., Tulsa—City, Dan W. Patton, Mayor, plans receiving bids to widen Third St. from 24 to 26 ft. to 44 ft., from Peoria to Utica Ave., estimated cost \$33,040; paving Birmingham Place from Seminole to Utica st.; Tecumseh St. from Birmingham Place to College Ave.; Evanston Place, Tecumseh St. to Martin Second Addition; College Ave., Martin Second Addition to north line of addition; estimated cost \$41,886; K. R. Teis, City Engr.

South Carolina—State Highway Comsn., Columbia, plans receiving bids to grade 17 roads and surface 9 roads: Oconee County—5 mi. Route 2, from Mountain Rest to North Carolina line; Chester County—22 mi. Route 9, Chester to Ft. Lawn; Union County—11 mi. Route 9, Lockhart to intersection with Route 22; Laurens County—16 mi. Route 15, Laurens to Princeton; McCormick County—14 mi. Route 20, Parksville toward Furey's Ferry; Clarendon and Williamsburg Counties—40 mi. Route 26, between end of paving near Manning and Georgetown County line near Andrews; Cherokee County—7 mi. Route 29, Gaffney to Blacksburg; Berkeley County—6 mi. Route 31, section of Old State road, from Goose Creek to Carnes Cross Road; Beaufort and Jasper Counties—32 mi. Route 33, Bluffton, through Hardeeville to Tillman, including "wye" connection with Route 17, near Hardeeville; Chesterfield County—24 mi. Route 35, McBee to Page-land; Horry County—24 mi. Route 40, intersection with Route 38 to North Carolina line; Newberry County—4 mi. Route 56, intersection with Route 392 to Laurens County line; Union County—14 mi. Route 92, Union to Spartanburg County line.

In Newberry County—3 mi. Route 175, relocate section between Newberry and Whitmire; Fairfield County—5 mi. Route 215, Jenkinsville to Richland County line; Anderson County—5 mi. Route 247, Belton to

Greenville County line; Berkeley County—7 mi. Route 402, Route 178 toward Route 40; Surface Treatment: Oconee County—11 mi. Route 2, Walhalla to Mountain Rest; Orangeburg and Bamberg Counties—20 mi. Route 6, north through Denmark; Chester County—15 mi. Route 7, Chester to Union County line; Oconee County—10 mi. Route 13, Westminster to Georgia State line; Bamberg-Colleton-Hampton Counties—32 mi. Route 23, Bamberg to Hampton; Lancaster County—7 mi. Route 93, Lancaster to North Carolina State line; Fairfield County—34.5 mi. Route 215, Richland County line to intersection with Route 7; Newberry-Saluda-Lexington Counties—2 mi. Route 391, Prosperity to Batesburg; Saluda County—14 mi. Route 392, Saluda to Chappells; Charles H. Moorefield, Ch. Highway Engr.

South Carolina—State Highway Comsn., C. D. Jones, Chmn., Columbia, received low bids totaling \$6,825,000 for 31 roads, 7 bridges and drainage canal: Abbeville County—15,677 mi. paving, Route 20, Abbeville to Donalds, Southern Paving Construction Co., Volunteer Life Bldg., Chattanooga, Tenn., \$815,343; Clarendon County—4 mi. Route 26, Manning toward Kingtree, Hooper Construction Co., Bunnell, Fla., \$119,060; Darlington County—13,521 mi. Routes 34 and 35, Darlington to Hartsville, Southern Paving Construction Co., \$312,619; Orangeburg County—7,825 mi. Routes 2 and 24, Orangeburg to point near Bowman, Joe F. Walters Co., Troy, Ala., \$265,572; 7,825 mi. Routes 2 and 24, point near Bowman to Dorchester County line, Pittman Construction Co., Rhodes Bldg., Atlanta, Ga., \$207,805; 19,825 mi. Routes 2 and 24, Orangeburg to Dorchester County line, H. E. Wolfe Construction Co., First Natl. Bank Bldg., St. Augustine, Fla., \$449,072; Lee County—7,879 mi. Route 76, Sumter County line to Lynchburg, Noll Construction Co., Builders Bldg., Charlotte, N. C., \$195,259.

In Lee-Florence Counties—9,021 mi. Route 76, Lynchburg to Timmonsville, Brown Paving Co., Columbia, \$213,958; 16.9 mi. Route 76, Sumter County line to Timmonsville, Southern Paving Construction Co., \$392,958; Edgefield County—13,058 mi. Route 25, Edgefield to Greenwood County line, Claussen-Lawrence Construction Co., 1394 Gwinnett St., Augusta, Ga., \$309,549; Greenwood County—9,018 mi. Route 25, Rhodes' store to Edgefield County line, Asheville Paving Co., Technical Bldg., Asheville, N. C., \$185,248; 22,076 mi. Route 25, Greenwood to Edgefield, Mitchell Brothers Construction Co., 3828 First Ave., S., Birmingham, Ala., \$562,910; Edgefield-McCormick Counties—14,735 mi. Route 43 between Route 25 and McCormick and .5 mi. Route 20, in McCormick County, W. F. Bowe, Jr., 540 Reynolds St., Augusta, \$366,850; Fairfield County—14,606 mi. Route 21, Blackstock to Winnsboro, R. G. Lassiter & Co., Carolina Life Bldg., Columbia, \$341,068.

In Calhoun County—14,668 mi. Routes 2 and 21, end of pavement north of St. Matthews to Lexington County line, H. E. Wolfe Construction Co., \$349,224; Lee County—10,906 mi. Route 20, Bishopville to Sumter County line, Joe F. Walters Co., \$253,140; Horry County—7,303 mi. Route 17, Lumber River to North Carolina state line, Consolidated Paving Co., State Bank Bldg., Orlando, Fla., \$212,692; Cherokee County—3,650 mi. Route 29, from Thicketty to Spartanburg County line, Dickson-Carroll Co., Montgomery, Ala., \$81,021; Pickens County—7,317 mi. Route 14, from courthouse, Pickens to point in Liberty, Dickson-Carroll Co., \$152,894; Laurens-Greenwood Counties—8,071 mi. Route 25, Princeton to Ware Shoals, Reed & Abe, 20 College St., Asheville, \$213,378; Spartanburg County—13,077 mi. Route 10, Spartanburg to Woodruff, Howerton Engineering Co., Medical Bldg., Asheville, \$265,070; Spartanburg-Laurens Counties—12,098 mi. Route 10, Woodruff to Ora, Southern Paving Construction Co., \$227,915; 24,878 mi. Route 10, Spartanburg to Ora, Southern Paving Construction Co., \$492,931.

In Charleston County—20,813 mi. Route 40, from point south of Awendaw to Santee River Bridge, Hardaway Contracting Co., Georgia Home Bldg., Columbus, Ga., \$584,426; 20,755 mi. Route 40, end of present pavement near Cooper River Bridge to point south of Awendaw, Hardaway Contracting Co., \$571,802; 41,569 mi. Route 40, Charleston to Santee River, Roberts Paving Co., Salisbury, Md., \$1,186,787; Chesterfield-Kershaw Counties—19,820 mi. Route 1, end of pavement to Kershaw County near Lynches River to point near Patrick, R. G. Lassiter & Co., \$407,087; Hampton-Allendale Counties—9,063 mi. Route 28, Allendale to limits of Brunson, J. F. Walters & Co., \$197,926; Hampton County—9,275 mi. Route 28, from point near Brunson to Varnville, C. G. Fuller, Barnwell, \$224,437; Hampton-Allendale Counties—18,338 mi. Route 28, Allendale to Barnwell, Davis Construction Co., Atlanta, Ga.; Florence County—1,081 mi. of alternate route of coastal highway from Church

St. in Lake City to U. S. Route 17, Cornell Young Co., Georgia Casualty Bldg., Macon, Ga., \$36,610; Dillon and Marion Counties—9,542 mi. Route 38, Marion County line to Latta, and Route 217, from Sellers to Route 17, Consolidated Paving Co., Orlando, \$247,238.

Bridges: Chesterfield County—treated timber and struct. steel overhead bridge over S. A. L. Ry., Route 1, Paul Gilmore, Spartanburg, \$9,449; Chesterfield-Kershaw Counties—rein. conc. bridge over Lynches River, Route 1, R. H. Blackwell, Kingsport, Tenn., \$70,239; Chesterfield County—rein. conc. bridge over Black Creek, Route 1, Small & Triplette, Emaxee Bldg., Greenville, \$25,639; Florence County—rein. conc. bridges, Route 76, between Cartersville and Timmonsville, P. E. Peake & Co., Columbia, \$24,977; treated timber, rein. conc. and steel bridge over Lake swamp, Route 17, near Lake City, Austin Brothers Bridge Co., 1195 Mickleberry St., Atlanta, \$10,031; Marion County—bridge over Toby's Creek, Route 217, Sellers to Pee Dee, George M. Hughes, Inc., Florence, \$15,107; overhead bridge over Atlantic Coast Line R. R. track, Route 217, Sellers to Pee Dee, Gaulden Brothers, Spartanburg, \$13,906; 4 mi. drainage canal, 1 mi. south of Sellers, J. B. Britton, Sumter, \$7760; Charles H. Moorefield, Ch. Highway Engr. 5-8

South Carolina—State Highway Dept., Columbia, approved bid of Carolina Portland Cement Co., 1 Broad St., Charleston, for 1,000,000 bbl. of cement at \$2.40 per barrel, of foreign manufacture.

S. C., Charleston—Sanitary and Drainage Comsn., E. D. Jersey, Engr., receives bids June 5 for sidewalk on Meeting St. road, from Clements Ferry to intersection of sidewalk on King St. Extension.

Tennessee—Dept. of Highways and Public Works, Nashville, receives bids June 13 for 9 roads and 7 bridges: Shelby County—6.1 mi. grading, draining, paving, State Highway No. 57, Memphis to Ridgeway; Hardin-Wayne Counties—8.4 mi. grading, draining, State Highway No. 69, between Station 956 and Alabama State line, also steel and conc. bridge over 20-ft. span; Tipton County—18.6 mi. grading, draining, Highway No. 59, Richardson's Landing to Covington, five steel and timber bridges over 20-ft. span; Hamilton County—4 mi. paving, Highway No. 29, Valdeau to Morrison road; Hickman County—13 mi. paving, Highway No. 100, Wrigley to Edgefield, Mitchell Brothers Construction Co., 3828 First Ave., S., Birmingham, Ala., \$562,910; Edgefield-McCormick Counties—14,735 mi. Route 43 between Route 25 and McCormick and .5 mi. Route 20, in McCormick County, W. F. Bowe, Jr., 540 Reynolds St., Augusta, \$366,850; Fairfield County—14,606 mi. Route 21, Blackstock to Winnsboro, R. G. Lassiter & Co., Carolina Life Bldg., Columbia, \$341,068.

Tenn., Blountville—Dept. of Highway and Public Works, Nashville, plans letting contract this summer for 20-ft. surface on Route 36, Appalachian Way, from Kingsport County to Johnson City, Washington County; B. H. Baker, State Highway Commr.; T. E. McEwen, State Highway Engr.

Tenn., Bristol—City Bd. of Mayor and Commsr. plans expending \$24,000 for extending Holston Ave. and widening Ninth St. See Financial News Columns.

Tenn., Chattanooga — City, Roger Crox, Commr., received low bid from Murray Construction Co., 508 Union Ave., Knoxville, \$31,037, for paving, curbing and sidewalk in connection with widening of Cherry St., East Ninth to Fourth St.; W. H. Wilson, City Engr.

Texas—State Highway Comsn., Austin, appropriated funds toward road building in 3 counties: Ector County—8.5 mi. bit. seal coat treatment, Highway No. 1; Crane County line to Judkins; G. B. Finley, Div. Engr., Balmorhea; Ward County—28 mi. bit. seal coat treatment, Highway No. 1, point east of Barstow to Crane County line; estimated cost \$20,300; G. B. Finley, Div. Engr., Balmorhea; Knox County—12,700 mi. grading, draining, Highway No. 24, Benjamin to King County line, estimated cost \$70,300; H. S. Kerr, Res. Engr.; Gibb Gilchrist, State Highway Engr.

Texas—State Highway Comsn., Austin, appropriated funds for 5 highways: Crane County—seal coat, Highway No. 4, from Ward-Crane to Crane-Ector County line; Galveston County—maintain Highway No. 125, from Galveston-Chambers County line to Galveston; Chambers County—maintenance of Highway No. 125, Stowell to Galveston County line; Hunt and Hopkins Counties—re-floor South Sulphur River Bridge, Highway No. 11; Fayette County—maintenance, Highway No. 109; Gibb Gilchrist, State Highway Engr.

Texas—State Highway Comsn., Austin, plans receiving bids in June to complete paving Barreda-Point Isabel road; Gibb Gilchrist, State Highway Engr.

Texas—State Highway Comsn., Austin, considering improving road from intersection of Highway No. 3 at Gonzales to intersection with same highway at Eagle Lake, via Shiner and Hallettsville; plans making survey for direct route between Ganado and Blessing, connecting Highways 111 and 57; Gibb Gilchrist, State Highway Engr.

Tex., Beaumont—City, Paul H. Millard, Mgr., receives bids June 3 to pave with rein. conc., natural rock asphalt or Duraco on conc. base, Elgie, Corley and Emmett St.; R. C. Black, City Engr. 5-15

Tex., Corpus Christi—City, Theo. Koester, Sec., plans widening Mesquite St., Hughes St. to bascule bridge, intersection with road leading into Port of Corpus Christi.

Tex., Cotulla—State Highway Comsn., Austin, plans receiving bids in June to pave gap in Laredo-San Antonio Highway through LaSalle County; Gibb Gilchrist, State Highway Engr.

Tex., Denton—Denton County, Walter A. Koons, Judge, plans 8.62 mi. rein. conc. Highway No. 40, from end of Federal Aid Project No. 117 to Dallas County line; W. D. Docker, Res. Engr.

Tex., Fort Worth—Tarrant County, S. D. Shannon, Judge, plans 9,021 mi. grading, draining, Highway No. 10, from junction of Highway No. 121, north to Keller; M. C. Wellborn, Res. Engr.

Tex., Hearne—City Council plans receiving bids to pave Cedar St.

Tex., Beaumont—Jefferson County, B. B. Johnson, County Judge, considering expending \$2,000,000 for roads. See Financial News Columns.

Tex., Houston—City, W. E. Monteith, Mayor, considering paving Nance St., Hill to North San Jacinto; opening McKee St. to connect with Crawford and Almeda, and opening Hill St. to connection with Clark; G. L. Fugate, Acting City Engr.

Tex., Houston—City, W. E. Monteith, Mayor, plans paving Chartres, Chenevert, Dallas and Crawford Sts.; G. L. Fugate, Acting City Engr.

Tex., Meridian—Bosque County plans expending \$10,000 for roads in Dist. No. 11. See Financial News Columns.

Tex., Pampa—Gray County considering expending \$2,500,000 for roads. See Financial News Columns.

Tex., Palestine—Anderson County, E. H. Shelton, Judge, plans 3.459 mi. grading, draining, Highway No. 40, Henderson County line to Frankston; C. H. Kendall, Res. Engr.

Tex., Palestine—Anderson County, E. H. Shelton, Judge, plans 8.448 mi. rein. conc., Highway No. 43, Palestine to Tucker; C. H. Kendall, Res. Engr.

Tex., Tex., Rusk—Cherokee County Comrs. Court plans expending \$750,000 for roads in Dist. No. 2, providing east and west road from Neches River to Mount Enterprise, and on lateral roads in dist. See Financial News Columns.

Tex., Throckmorton—Throckmorton County, J. L. Robinson, Judge, plans 13.641 mi. 2 1/4-in. asphalt macad. surface course on 8-in. compacted sledge stone base course, Highway No. 67-A, Stephens County line to intersection with Highway No. 23; Jas. E. Pirie, Res. Engr.

Tex., Van Horn—Culberson County, Judge, plans 13,021 mi. grading, draining, Highway No. 1, Bankhead Highway, from Sta. 264 plus 00 to Sta. 00; A. J. Adcock, Res. Engr. Fort Davis.

Tex., Waxahachie—Ellis County Commsr., A. R. Stoit, County Judge, receive bids June 17 for preparing subgrade and rock 2 lateral roads with limestone rock: 5.89 mi. Ferris-Bristol road; 5.89 mi. Ferris-Waxahachie road.

Tex., Bristol—City, J. F. McCrary, Mgr., receives bids June 3 to grade and conc. pave Cumberland, Solar, Moore, Mary and Russell St.

Tex., Bland—State Highway Comsn., Bland, plans letting contract soon for 9.3 mi. surface Lakes-to-Florida Highway, Bland County; C. S. Mullen, Ch. Engr.

Tex., Charlottesville—City Council and Advisory Bd. considering Market St.-Preston Ave. development into Rugby road, connecting Route 28 directly with downtown Charlottesville; H. A. Yancey, Mgr.

Va., Ridgeway—State Highway Comsn., Richmond, allocated \$25,000 gravel and oil surface highway from Ridgeway, Henry County, to North Carolina line toward Leaksville;

plans other improvements in Henry and adjoining counties, including coat of gravel and oil on road from State Highway No. 33, at Rough and Ready Mills to Bassett; re-oil Stuart road, resurface Route 12, from point near Patrick Springs Depot to Stuart; probably recondition road to Martinsville; C. S. Mullen, Ch. Engr.

W. Va., Beckley—City plans expending \$200,000 for street improvement, including widening North Kanawha St. See Financial News Columns. 4-24

W. Va., Clarksburg—City, Frank J. McAndrew, Clk., plans widening, grading, curbing, paving and rein. conc., and laying sewers on Washington Ave. and South Twenty-fourth St.

W. Va., Hollidays Cove—City plans expending \$48,000 for street improvement. See Financial News Columns.

W. Va., Fairmont—Ralph W. Fimple, 264 Cleveland Ave., Fairmont, low bidder for road in Fairmont Normal School grounds: Oil asphalt, 8,400 gal., \$6,058; amiesite topping wearing surface, 3,500 sq. yd., \$6,548; Kentucky rock asphalt, 3,500 yd. \$7,148.

Contracts Awarded

Ala., Montgomery—City, W. A. Gunter, Mayor, let contract to T. J. Kelley, 305 Alabama St., for curb, gutters and sidewalk on Saffold St.; to R. G. Lassiter Co., Shepherd Bldg., to resurface with asphalt, Bibb and St. Moltol to Catoma St.; J. M. Garrett, City Engr.

Ark., Osceola—Mississippi County, Luxora-Little River Maintenance Dist. No. 1, let contract to A. C. Kennedy, Little Rock, at \$19,840 for about 45,000 cu. yd. earth excavation: to Wilson Nailing Co., Osceola, \$7607 for 600 lin. ft. timber bridges; at \$66,663 for 50,000 cu. yd. gravel road; Morgan Engineering Co., Goodwyn Inst. Bldg., Memphis, Tenn.

Fla., Fort Myers—Smith & Smith have contract at 78 cents per cu. yd. for 1,900 cu. yd. shell on Burnt Store road; Asfalterra Co., Jacksonville, has contract for 1 mi. sand asphalt Ballard road.

Georgia—State Highway Bd., East Point, let contracts for 7 roads and 3 bridges: Brantley County—9.07 mi. limerock surface treatment, Waycross-Brunswick road, Langston Construction Co., 26 Wall St., Orlando, Fla., \$174,837; Cobb County—8.203 mi. grading Marietta-Canton road, Nichols Contracting Co., 1281 La France St. N. E., Atlanta, \$37,169; conc. bridge, J. G. Attaway, 681 Kennesaw Ave. N. E., Atlanta, \$5773; Harris County—17.277 mi. conc. paving, Chipher-Columbus road, and one treated timber bridge, Morgan Hill Paving Co., Woodward Bldg., Birmingham, Ala., \$346,533; Jefferson County—6.75 mi. grading, Louisville-Sandersville, Nichols Contracting Co., \$33,848; treated timber bridge, S. P. Cook, Fairmount, Ga., \$39,791; Long County—2,248 mi. grading, Jessup-Ludowici road, K. V. Johnson, Edgefield—9.19 mi. conc. paving, Covington-Madison road, Davis Construction Co., Waltonfield, S. C., \$20,475; Newton-Walton County Bldg., Atlanta, \$198,874; B. P. MacWhorter, State Highway Engr. 5-15

Ga., Decatur—J. S. Looney, Mgr., let contract to C. A. Pittman, 436 Whitehall St. S. W., Atlanta, for conc. paving Coventry road, from Nelson Ferry road to city limits.

Ky., Eminence—City Council let contract to Kentucky Road Oil Co., Frankfort, at about \$7,000 to rebuild North and South Main St.; East and West Broadway; Sulphur Ave.; work to start in about one week.

Ky., Louisville—City, A. A. Hill, Dir. of Public Works, let contracts totaling \$74,123 for rebuilding various streets: Andrews-Collings Asphalt Co., Inter-Southern Bldg.; Henry Bickel Co., 435 Garden St.; Louisville Asphalt Co., Louisville Trust Bldg.; G. M. Eady & Co., Gilbert and Lee St.; J. U. Schickli & Bros., Greenwood Ave.; C. W. McFarland, 1220 River Road, Louisville. 5-8

Ky., Louisville—City, Bd. of Public Works, let contracts totaling \$200,135 for 31 streets projects: Henry Bickel Co., Inc., 435 Garden St.; Frank G. Breslin Co., Thirty-second and Market St.; George M. Eady Co., 340 Byrne St.; Louisville Asphalt Paving Co., 240 E. Lee St.; Andrews Asphalt Paving Co., Inter-Southern Bldg.

La., New Orleans—Dept. of Public Finance let contracts totaling \$123,955 for conc. sidewalks, deep reef shell surface, Uvalde rock asphalt on conc. paving, sand gravel surface, subsurface drains, etc., on about 11 streets: J. S. Saneau; H. L. Villere, 2536 State St.; Uvalde Rock Asphalt Co., New Orleans Bank Bldg.; H. P. and J. F. Egan, 4330 Canal St., all New Orleans.

Mo., Kansas City—City, Matthew S. Murray, Dir. of Public Works, let contract to Kelly-Welsh, at \$28,384, for 8-in. conc. paving and curbing, Wyandotte St.; to D. T. Brosnahan, City Bank Bldg., at \$12,896, for 8-in. conc. pavement, Gould St.

Mo., Rich Hill—City, H. F. Hallam, Clk., let contract to Independent Construction Co., Pittsburgh, Kansas, for 11 blocks paving in business section; work to start within 10 days. 5-15

N. C., Southern Pines—Town, D. G. Stutz, Mayor, let contract to Bituminous Earth Road Corporation, Professional Bldg., Raleigh, for retreatment of 50,000 sq. yd. paved streets.

Ola., Oklahoma City—City, M. Peshek, Jr., Clk., let contract to Earl W. Baker Co., Perrine Bldg., at \$16,900, for 2-in. rock asphalt surface on 6-in. conc. base, Kentucky Ave.; to Connally Bros., Magnolia Bldg., at \$26,742, for paving on Second St.; to Western Paving Co., 610 Grand St., \$31,200, for Fifth St.; W. W. Small, City Engr.

Ola., Tulsa—City, Dan W. Patton, Mayor, let contract to Porter Construction Co., Lewis and Frisco tracks, at \$15,582, to widen Harvard Ave.; K. R. Teis, City Engr.

Tenn.—Dept. of Highways and Public Works, Nashville, let contracts for 8 roads and 16 bridges: Henderson County—9.5 mi. grading, draining, State Highway No. 20, Lexington to Darden, including 9 bridges over 20-ft. span, Nello L. Teer, Durham, N. C., \$183,301; Knox County—7.2 mi. grading, draining, State Highway No. 9, Knoxville to Trentville, including 2 bridges over 20-ft. span, Jamison Brothers, Nashville, \$130,650; Washington County—7 mi. grading, draining, Highway No. 107, Greene County line to Conklin, also 5 bridges over 20-ft. span, J. C. Rambo, Mountain City, \$106,863; Marshall County—11.03 mi. rock asphalt and conc., State Highway No. 51, between Lewisburg and Duck River, Municipal Paving & Construction Co., Independent Life Bldg., Nashville, \$280,392; Hickman County—2.9 mi. grading, draining, Highway No. 48, Nunnelly to Route No. 48, N. L. Teer, Geer Bldg., Durham, N. C., \$11,930; Hamilton County—8 mi. conc., Highway No. 27, Valdeau to Stringer Ridge Tunnel, Carter Gamble Co., 929 Carter St., Chattanooga, \$19,250; Fayette-Hardeman County—18.7 mi. grading, draining, Highway No. 18, between Route 57 near Lagrange and Route 15 near Bolivar, Nixon & Phillips, 917 Sixth Ave., N. Birmingham, Ala., \$130,118; Wilson County—9.2 mi. grading, draining, Highway No. 24, Davidson County line to Martha, and 5 bridges over 20-ft. span, Marion Construction Co., Gainesboro, \$129,409, subject to approval of U. S. Bureau of Public Roads. 4-24

Tenn., Chattanooga—City, Roger Crox, Commr., let contract to Murray Construction Co., 508 Union Ave., Knoxville, at \$81,089 to pave Dodson Ave.; W. H. Wilson, City Engr.

Texas—State Highway Comsn., Austin, let contracts for 6 roads and 2 bridges, totaling \$528,567; Ellis County—12 mi. conc., Highway No. 6, Forrester to Hall County line, Standard Paving Co., Majestic Bldg., Fort Worth, \$246,505; Navarro County—6.9 mi. conc., Highway No. 32, F. P. McElwraith, Corsicana, \$166,951; Tarant County—2 mi. grading and draining, Highway No. 121, and approaches to Big Bear Creek, Trinity Farm Gravel Co., Dallas, \$43,205; 2 rein. conc. bridges over Fossil and over Big Bear Creek, Crocker & Fisher, Allen Bldg., Dallas, \$46,268; Hardin County—1.27 mi. surface treatment, Highway No. 40, from intersection of Highways No. 8 and 40 to Kountze, Cooke & Braden, Marshall, \$24,925; Collin County—7.9 mi. surface treatment, Highway 39, Collin-Denton County line east, Haden & Austin, Post-Dispatch Bldg., Houston, \$15,418; Cooke County—14.2 mi. seal coat, Highway No. 40, Gainesville to Cooke-Denton County line, Haden & Austin, \$10,857; Gibb Gilchrist, State Highway Engr. 5-15

Texas—State Highway Comsn., Austin, let contract for 3 roads totaling \$489,706; Mitchell County—15 mi. conc., Highway No. 1, from Westbrook to point east of Colorado, Ben Flynn, Amarillo, \$298,463; 5 mi. water-bound macad., Highway No. 1, end of conc. to Nolan County line, Trinity Farm Gravel Co., Box 1116, Dallas, \$73,312; Fort Bend County—4.5 mi. grading, draining, conc., Highway No. 36, Rosenberg to Pleak School, Russ Mitchell, Inc., Petroleum Bldg., Houston, \$117,929; Gibb Gilchrist; State Highway Engr. 5-15

Va., Hopewell—City, Roy S. Braden, Mgr., let contract to Atlantic Bitulithic Co., Munsell Bldg., Washington, \$64,642, for resurfacing downtown streets and repaving City Point road; to Frank J. Rose and Swain Contracting Co., Hopewell, \$31,979, for grading, draining, graveling, curbs and gutters: E. S. Van Demark, Constr. Engr. 5-22

Va., Richmond—City, R. Keith Compton, Dir. of Public Works, let contract to City

CONSTRUCTION DEPARTMENT

Manufacturers Record

Building Corporation at \$75,000 for curbing and gutters on various streets.

Sewer Construction

Sewer construction in LAND DEVELOPMENT projects involves the expenditure of large sums of money. Under that classification details of these improvements are reported.

Ala., Birmingham—City construct sanitary sewer on Southside; cost \$93,000.

Ala., Montgomery—A. H. Dimijian, Woodward Bldg., Birmingham, reported, low bidder for sanitary sewers, Thomas Ave., Woodley Rd., Peach St., etc.

Ark., Augusta—Sewer Improvement Dist. No. 1 receives bids June 2 for laterals and pumping station. See Want Section—Bids Asked.

Ark., Berryville—Altman Rogers Co., Cotton-Grain Exchange Bldg., Oklahoma City, Okla., reported, has contract for sewer in 5-1 Sewer Imprv. Dist. No. 1; cost \$49,000.

D. C., Washington—District Comms. let following contracts for sewers: M. Cain Co., Inc., 13 Sixth St., E., for stormwater on Thirty-fifth between Porter and Quebec Sts.; W. A. Pate, Jr., 1048 Twenty-ninth St. N. W., for stormwater Fifteenth St. between Otis and Newton St. N. W.; Peter D'Adamo Construction Co., Marine Bank Bldg., Baltimore, Md., for combined system sewer, Georgia Ave., stormwater sewer, Thirtieth St., Upper Hickory Run, Thirty-ninth between McKinley and Northampton Sts., N. W., service sewers, Webster St., N. W., and S. Dakota Ave., and replacement sewers in Seventh St. and H Sts., N. W.

Fla., Tampa—City, reported, considering sanitary sewers in Suburb Royal section, Ridgewood Park and West Tampa; storm sewers in Seminole Heights, Ybor City, etc.

Ky., Lexington—W. T. Congleton & Co., Third and Walton Sts., have contract for construction sanitary sewer system on E. Third St., Detroit, Dayton and Delaware Aves.

La., New Orleans—Sewerage and Water Bd. received low bids for following projects: John Ries, New Orleans Bank Bldg., at \$138,500, for Contr. 114-D, extension to drainage pumping station No. 3; Fulton Iron Works Co., New Orleans Bank Bldg., at \$25,500 for Contr. 107-D, two 110-in. screw pumps for drainage pumping station No. 9 and at \$11,000 for 1 additional pump; Westinghouse Electric & Mfg. Co., Masonic Temple Bldg., New Orleans, at \$43,250 for Contr. 115-D, truck type switchboards, motor generators, transformers and accessories; Interstate Electric Co., 643 Magazine St., for furnishing insulated wire and cable for sewerage station No. 17.

Md., Baltimore—N. Martell, 4400 Vesta Ave., has contract at \$10,808, for storm water Contr. 149; Angelozi Constr. Co., White & Belle Vista Aves., at \$131,260, for storm water Contr. 110.

Miss., Hazlehurst—Town receives bids June 3 for furnishing materials and constructing sanitary sewer system; Culley O'Brien Engineering, Inc., 301 Standard Life Bldg., Jackson, Engrs.

Mo., Kansas City—Director of Public Work, Matthew S. Murray, received following low bids for sewers: Boyle Construction Co., 226 W. 30th St., at \$51,000, for joint sewer district between Seventy-seventh St. and Seventy-seventh Terrace from Prospect; Brown Bros., at \$8907, for joint district sewer from Seventy-Fourth and Troost to Seventy-fifth and Harrison; Kinlen Construction Corp., at \$2710, for 3 sewer laterals in district from Thirty-seventh to Thirty-ninth, Kensington Ave. to Vineyard Rd.

Mo., Lebanon—City plans voting soon on bonds for sanitary sewers; Russell & Axon, Consult. Engrs., McDaniel Bldg., Springfield.

Mo., Plattsburgh—City, reported, plans sanitary sewer; J. W. Shilkes & Co., Engrs., New York Life Bldg., Kansas City.

N. C., Bessemer City—Town let contract to C. A. Jones, Bessemer City, for sewer line extensions; material purchased from Pomona Terra Cotta Co., Pomona, Greensboro; M. L. Rhyne, Clk.

N. C., Hazlewood—Gilbert C. White Co., Consult. Engrs., Durham, making surveys for outfall sewer line between Lake Junaluska and Waynesville and Hazlewood; 6 miles of 18-in. to 30-in. diam. pipe.

Okla., Oklahoma City—City appropriated \$15,000 for temporary extensions or sewer on Thirteenth St. and Billen Ave. and Gatewood Ave.

Okla., Tipton—City, reported, install 2 sewage pumps and motors; A. S. Martin, Mayor.

S. C., Charleston—Sanitary and Drainage

Coms. receives bids June 5 for storm drain with manholes, etc. See Want Section—Bids Asked.

S. C., Greenville—T. C. Gower, Chmn., Greater Greenville Sewer Dist. Coms., authorizes surveys to determine cost of sewer laterals and water lines in Eastover, Overbrook, and Gassaway sewer districts; also authorized surveys by J. E. Sirrine & Co., Engrs., in County Club, Brushy Creek, River-Creek, Riverside and Monaghan subdivisions.

J. Stringham, 40 E. Thirty-fourth St., New York City, is president of Knit Goods Corp. of America; mill involves installation of 80 full fashioned hosiery machines; J. E. Sirrine & Co., Greenville, S. C., engrs. and archts.

4-17 Miss., Waynesville—Laurel Hosiery Mill, Laurel, reported, considering moving plant to here.

N. C., Salisbury—Potter & Shackelford, Allen Bldg., Greenville, S. C., reported, has contract for erecting 2 warehouses and enlarging and remodeling bleachery of North Carolina Finishing Co.; warehouses of brick, 50x100 ft.; install roof on bleachery, etc.

S. C., Pageland—Pageland Thread Mills, Inc., S. A. McFalls, Sec., Charlotte, N. C., acquired plant of Pageland Cotton Mill.

5-22 Va., Covington—The Christian, Schwarzenberg & Gaede Co., Union Bldg., Cleveland, O., advises that awarding of contracts for plant for Industrial Rayon Corp. of America has been postponed for the present; when matter is taken up for consideration the general contractors will be given opportunity of reviewing their bids and checking back with sub-contractors and machinery dealers.

5-15 W. Va., Wheeling—Valley Knitting Mills, Inc., chartered; Tom J. Cauley, Nazareth, Pa.; build knitted wear plant on 4 acre site Middle Wheeling Creek.

Water Works

Details of water works improvements in connection with the many LAND DEVELOPMENT operations will be found under that classification.

Ala., Livingston—Town let following contracts for water works: J. B. McCrary Co., Citizens & Southern Bank Bldg., Atlanta, Ga., Gen. Contr.; J. S. Schofield Sons Co., 356 Broadway, Macon, Ga., will furnish one 75,000 gal. steel tank on 75 ft. tower; Eagle Picher Lead Works, 1006 Broadway, Cincinnati, virgin pig lead; U. S. Pipe & Foundry Co., American Traders Natl. Bank Bldg., Birmingham, centrifugal pipe and fittings; Central Foundry Co., Comer Bldg., Birmingham, for c. i. boxes; R. D. Wood & Co., 400 Chestnut St., Philadelphia, Pa., for standard 2 way hydrants, H. E. gate valves and boxes; Kalman Steel Co., Candler Bldg., Atlanta, Ga., for rein. conc. bars; Mutual Foundry & Machine Works, Hemphill Ave., Atlanta, Ga., for filter manifold and laterals; Wallace & Tierman Co., Holston Bank Bldg., Knoxville, Tenn., for dry feed machines and chlorinator; General Electric Co., Red Rock Bldg., Atlanta, Ga., for vertical squirrel cage motors; Murphy Equipment Co., Hurt Bldg., Atlanta, Ga., for horizontal centrifugal pump and deep well centrifugal pump.

5-1 Ark., Hardy—City, reported, plans water works system.

Ark., Little Rock—W. Terry Field, Engr., Gazette Bldg., receives bids until June 7 for pumping plant, Cap Pike; brick; 1 story; 50,000 gal. rein. conc. reservoir; install air compressor.

Fla., Pahokee—City plans voting on water bonds. See Financial News Columns.

La., Oberlin—City receives bids June 17 for complete water works; A. E. Darbonne, Mayor.

4-24 Md., Baltimore—Chesapeake Construction Co., 216 St. Paul St., low bidder at \$19,418, for trenches Alameda Blvd.

Md., Curtis Bay, Baltimore—Chicago Bridge & Iron Works, Chicago, Ill., has contract at \$55,250 for steel tank.

5-22 Md., Funkstown—City voted \$15,000 water works bonds.

Miss., Sledge—Town, C. N. McGee, Mayor, receives bids June 3 for sinking well and installing water works system.

Mo., Cape Girardeau—Missouri Utilities Co., subsidiary Community Power & Light Co., Planters Bldg., St. Louis, reported, install water filter plant, improve gas service and construct street lighting system.

Mo., Grant City—City, reported, plans \$44,000 filtration plant, steel tank, etc.; J. W. Shilkes & Co., Engrs., New York Life Bldg., Kansas City.

Okla., Clinton—Standard Paving Co., 2110 N. Eleventh St., Tulsa, reported, has contract for water supply system.

Okla., Elk City—City, reported, plans voting soon on \$50,000 water main extension bonds; C. A. Wood, Engr., Perrine Bldg., Oklahoma City.

Okla., Seminole—Chicago Bridge & Iron Works, Chicago, Ill., reported, has contract for 150,000 gal. iron water storage tank on steel tower; R. N. Geer, Engr.

Textile Mills

Miss., Corinth—City, reported, voted \$180,000 to purchase 7% bonds of Knit Goods Corp. of America; company plans establishing plant for manufacture silk hosiery and probably underwear and gloves; engineers now planning building; construction to begin soon; Dave Cottrell, Industrial Dept. Mississippi Power Co., Gulfport, and T. D. Johnson, Birmingham, Ala., reported, interested in securing site for mill; Ernest

Tenn., Elizabethton—City, reported, considering purchase of Mountain Spring Water Co.

Tenn., Fountain City, Knoxville—State Railroad and Public Utilities Comsn., Nashville, reported, granted franchise to Thomas J. McDermott, 6041 Pershing St., St. Louis, Mo., to build and operate water supply system; expend \$110,000. 5-15

Tenn., Memphis—City authorized laying 17,855 ft. of water main; cost \$19,676.

Tex., Amarillo—City, reported, voted \$380,000 water works bonds.

Tex., Beaumont—City will have investigation made by Hawley, Freeze & Nichols, 411 Capps Bldg., Fort Worth, for increased water supply.

Tex., Brownsville—City, Z. A. Rosenthal, City Mgr., has had plans completed by Morey & Morey, Engrs., Praetorian Bldg., Dallas, for \$125,000 filtration plant; probably call for bids in about 90 days. 3-27

Tex., Grapevine—City voted \$45,000 water works bonds.

Tex., Houston—Layne-Texas Co., Second Natl. Bank Bldg., reported, has contract at \$37,500 for drilling well in East End. 5-8

Va., Luray—City defeated bonds for water system and sewerage extension. See Financial News Column. 2-6

Woodworking Plants

Fla., Willow—McGowan-Foshee Lumber Co. install machinery to manufacture nail, bolt and spike kegs from longleaf pine.

Ky., Livermore—Green River Chair Co. increasing capital, \$200,000 to \$250,000.

La., St. Martinville—George Levingston erecting box plant; 2 story.

Mo., Carthage—J. V. Wilson, Hillcrest St., and W. G. Kirkman, 312 Otteray St., both High Point, N. C., acquired Carthage Furni-

ture Mfg. Co., formerly Tyson and Jones Buggy Shop; will manufacture overstuffed living room furniture; overhauling machinery.

Tenn., Jackson—Capps Casket Co., capital \$50,000, incorporated; D. Ross Capps, V. Ashby.

Tex., Fort Worth—Steve Sash & Door Co., 100 S. Adams St., erect \$20,000 building, Lowden and Bryan St.; 1 story, 94x198 ft., frame, metal.

Va., Clifton Forge—L. T. Burchett, Buena Vista, move plant here, manufacturing locust pins used by telephone, telegraph and electric companies in erecting transmission lines; use 7 to 8 cords locust wood daily.

FIRE DAMAGE

D. C., Washington—Wharf, foot of P St. N. W., of U. S. Coast Guard.

Ky., Latonia—Beets Lumber Co.'s plant; loss \$50,000.

La., Alexandria—Benoit-Spencer Mfg. Co.'s lumber plant, Christine St.; loss \$40,000.

La., Homer—Herbert Watkins' residence.

Md., Woodsboro—Barn of LeGore Lime Co., one mile from Woodsboro; loss \$10,000.

Tenn., Newport—Cocke County courthouse. Address Bd. of County Comms.

Tex., Gilmer—Building housing Gilmer State Bank and Masonic Lodge.

Tex., Fort Worth—Storage building of Ralston Purina Mills, 1521 E. Fourth St.; loss \$50,000.

Tex., Borger—Head Hospital; loss \$30,000.

W. Va., Oak Hill—B. E. Watkins' hotel; Bennett & Blake's store; loss \$15,000.

BUILDING NEWS

BUILDINGS PROPOSED

Association and Fraternal

La., New Orleans—Young Men's Christian Assn., J. Lee Rhodes, Chmn., Bldg. Comm., 220 Audubon Blvd., rejected bids for \$300,000 Central Bldg., Lee Circle and St. Charles Ave.; revise plans and call for new bids; Favrot & Livaudais, Ltd., Archts., Hibernia Bldg.

La., Winnsboro—American Legion, R. E. Applewhite, Commdr., plans \$15,000 to \$20,000 clubhouse, Main St.

Mo., Edina—Cyril A. Graham Post No. 261, American Legion, considers erecting \$50,000 memorial bldg.; brick, 2 stories.

Tex., Lamesa—Allen-Houston Post, American Legion, raising funds for clubhouse.

Bank and Office

D. C., Washington—Park Savings Bank, G. E. Walker, Pres., 14th and Kenyon Sts., drawing plans for \$100,000 addition; brick, 2 stories, 55x100 ft., conc. floors and foundation, slate roof, part fireproof; Appleton P. Clark, Jr., Archt., 816 Fourteenth St., N. W. 8-8

Mo., St. Louis—Nathan Frank, Arcade Bldg., advises Nathan Frank, Inc., does not plan office bldg., 12th Blvd. and Pine Sts.; hopes to negotiate 90-yr. lease to party who would erect building. 5-15

Tex., Eagle Pass—First National Bank, Geo. Hollis, Pres., remodel and erect addition to bldg.; brick, conc. and steel; \$50,000; Paul G. Silber & Co., Archts., Bedell Bldg., San Antonio.

Va., Lynchburg—Lynchburg-Campbell County Medical Assn., Dr. Chas. P. M. Shefey, Sec., interested in erection of medical arts bldg., Eighth and Church Sts.

Churches

Ala., Uniontown—First Baptist Church, Rev. J. V. Dickinson, Pastor, open bids May 27 to remodel bldg.; \$10,000; N. Sargent Hamilton, Archt., Sans Souci Studio, P. O. Box 71, Station C. 5-16

Ark., Clarendon—Park Grove Baptist Church, Rev. J. W. Smith, Pastor, Marvell, considers erecting building.

Ark., Fort Smith—Dodson Ave. M. E. Church, South, Rev. Geo. W. Pyles, Pastor, having working plans completed by Haralson & Nelson, Archts., Merchants Bank Bldg., for \$60,000 auditorium; soon call for bids.

Ark., Lake Village—Baptist Church, reported, have plans by N. W. Overstreet, Mississippi Fire Insurance Co. Bldg., Jackson, Miss., ready in about 2 weeks for bids for brick and stone trim bldg.; 67x136 ft., \$30,000.

Fla., Coral Gables, Miami—Church of Christ, Scientist, erect bldg.; John & Coulton Skinner, Archts., French Village, LeJeune Rd.

Fla., St. Petersburg—Trinity Presbyterian Church, Colored, Rev. O. M. McAdams, Pastor, purchased property, Ninth Ave. and 19th St., South; remodel one bldg. for church and one for parsonage.

La., New Orleans—Alex W. Norman, Archt., Maritime Bldg., completed plans for 1-story frame and stucco church, Teche St., Algiers; tile roof; following contractors invited to estimate: J. A. Haase, Jr., 916 Union St.; Alvin M. Fromherz, Q. & C. Bldg.; J. A. O'Brien, Louisiana Bldg.; Garry-Oakes Co., Q. & C. Bldg.; Reilly-Ruckstuhl, Inc., 423 Carondelet St.

Md., Annapolis—Trinity M. P. Church, Rev. D. L. Fringer, Pastor, 382 West St., plans \$45,000 church and Sunday school after plans by W. B. Gardner, West St.; brick, 1 story. 8-15

Mo., St. Louis—Grace Methodist Church, Rev. J. E. Crowther, Pastor, 6199 Waterman Ave., erect \$50,000 bldg., Skinker Rd. and Waterman Ave.; Trueblood & Graf, Archts., Chemical Bldg.

Mo., Columbia—Baptist Church considers erecting \$150,000 auditorium.

Mo., Springfield—Jewish Synagogue, Dave Schwab, Chmn., Bldg. Comm., 1150 S. Pickwick St., erect \$10,000 synagogue after plans by Wilmer N. Thompson, Archt., 430 Loren St.; brick and tile, 1 story and part basement, 38x68 ft.; ready for bids. 5-22

Miss., Moorhead—Methodist Church erect \$10,000 to \$15,000 annex.

N. C., Charlotte—Durham Memorial Bap-

tist Church, Rev. Geo. H. Johnson, Pastor, 16 Rozzells Ferry Road, plans building.

N. C., Charlotte—St. Lukes Lutheran Church, Rev. H. P. Wyrick, Pastor, started work on \$28,000 bldg., Dilworth Rd., East, and East Blvd.; English type; auditorium seat 225, Sunday school 250.

Okla., Oklahoma City—First Baptist Church, 1201 N. Robinson St., Rev. T. L. Holcomb, Pastor, erect fireproof Sunday school; brick, 3 stories, \$100,000; fund campaign completed; architect not selected. 5-8

S. C., Charleston—St. Peters Church, Ruthledge and Sumter Sts., C. D. Schirmer, member, Bldg. Comm., Old Citadel, erect \$40,000 church, parish house and rectory after plans by J. D. Newcomer, Archt., 32 Broad St.; 1 and 2 stories; address proposals on furnishings, equipment, etc., \$45,000 to \$50,000, to Mr. Schirmer. 5-22

S. C., Newberry—Aveleigh Presbyterian Church, Rev. Marshall C. Dendy, Pastor, opens bids June 4 for Sunday school addition and church remodeling; \$15,000; brick veneer, 2 stories, 34x72 ft.; N. Sargent Hamilton, Archt., Sans Souci Studio, P. O. Box 71, Station C, Atlanta, Ga. (Lately reported under N. C., New Bern.) 5-22

Tex., Dallas—Church of the Incarnation, Harry I. Maxson, member, Santa Fe Bldg., erect \$20,000 young people's addition; DeWitt & Washburn, Archts., Kirby Bldg.

Tex., Georgetown—Roman Catholic Congregation, Mrs. Louis Lowe, member, start work in few weeks on \$15,000 bldg., Timber and 12th Sts.; one and stucco.

City and County

Ga., Augusta—Richmond County Bd. of Commrs., C. J. Skinner, Chmn., Bldg. Comm., probably have plans ready in several weeks to remodel courthouse; \$47,000; Story & Clark, Archts., Leonard Bldg. 2-20

Ga., East Point—City of Atlanta, J. A. Ragsdale, Mayor, voted \$65,000 bonds for municipal bldg.; brick, stone trim, 2 stories and basement, struct. steel, conc. footings, comp. roof; city offices, auditorium, fire dept.; architect not selected.

La., Abbeville—Following contractors estimating on remodeling work, Vermillion Parish courthouse; bids June 4: W. J. Quick, 424 Bibbs St., Lake Charles; G. P. Sledge, Abbeville; Chas. Montgomery, Kaplan; Theo. L. Perrier, Archt., Maritime Bldg., New Orleans. 5-22

La., Cameron—Cameron Parish Police Jury votes July 8 on \$125,000 courthouse and jail bonds.

La., Many—Sabine Parish Police Jury selected C. H. Leinbach, Central Bk Bldg., Dallas, Tex., as architect for jail above courthouse; tax levy voted; steam heat. 4-24

Ky., Lexington—Fayette County Fiscal Court has low bid at \$28,490 from Clark, Stewart & Wood, 254 Irvine Road, Lexington, for cell house unit of new jail; jail equipment, Fries & Son Steel Construction & Engineering Co., Covington, at \$58,550; Frankel & Curtis, Archts., Hernando Bldg., Lexington. 5-15

Miss., Okolona—City voted \$60,000 city hall bonds; fireproof, brick, stone trim; 30-room hotel in connection; Frank Kincannon, Archt., Tupelo. 3-20

Mo., St. Louis—Board of Public Service, E. R. Kinsey, Pres., drawing plans for alterations to Fire Engine House No. 29, 1219 S. Vandeventer Ave.; \$15,000; also completing revised plans for alterations to house No. 36, Union and Cote Brilliante; \$6000.

Mo., St. Louis—Board of Public Service has low bid at \$10,500 from International Co., Intl. Life Bldg., for alterations and addition to Engine House No. 20. 5-1

Okla., Tulsa—City, C. H. Terwillegar, Chmn., City Plan Comsn., considering tentative report for sites for proposed civic center to include city hall, convention hall, library, county court house, etc.

Tex., Port Arthur—City, J. W. O'Neal, Mayor, convert old Mary Gates Hospital for city hall.

Va., Richmond—Henrico County Bd. of Supvrs., W. B. Bottoms, Chmn., receives bids June 5 at 318 Mutual Bldg., for Westhampton fire station, Maple Ave. near Grove Ave., for Sanitary Dist. No. 1; specifications from R. Stuart Royer, Supervisory Engr.

W. Va., Clarksburg—Harrison County Court and Advisory Board receiving competitive plans from architects for \$750,000 courthouse; following architects among those invited to submit plans: Walker & Weeks, 2341 Carnegie Ave., Cleveland, Ohio; Cass Gilbert, 244 Madison Ave., New York; Wyatt & Nolting, Inc., Keyser Bldg., Baltimore, Md.; Harry Barton, Jefferson Standard Bldg., Greensboro, N. C.; Gustave W. Drach, Union

CONSTRUCTION DEPARTMENT

Manufacturers Record

Trust Bldg., Cincinnati, Ohio; Milburn, Heister & Co., Hill Bldg., Washington, D. C.; Edw. F. Neild, City Natl. Bank Bldg., Shreveport, La.; Chas. W. Bates, Hawley Bldg., Wheeling, W. Va.; Simon & Simon, Fidelity Philadelphia Bldg., Philadelphia, Pa. 6-27

Dwellings

Ark., Pine Bluff—J. V. Beall erect brick veneer residence; 2 stories, hardwood floors, tile baths, comp. on the roof; Thos. Hardin, Archt., New Donaghay Bldg., Little Rock.

D. C., Washington—W. C. & A. N. Miller, have permit for \$16,000 dwelling, 4426 Garland St., N. W.; stone, conc. and brick, 3 stories; owners build.

D. C., Washington—C. W. Morris & Son, Evans Bldg., have permit for 4 brick dwellings, 324-30 Concord Ave., N. W.; 2 stories; \$22,000.

D. C., Washington—C. W. Williams, Edmonds Bldg., has permit for 3 brick dwellings, 620-24 Madison St., N. W.; 2 stories; \$16,000.

D. C., Washington—D. G. Acheson, Union Trust Bldg., has permit for \$10,000 residence, 2805 P St., N. W.; 2 stories and attic.

Fla., Eustis—R. E. Sawyer erect residence, Eustis Heights; let contract in few days.

Fla., Fort Lauderdale—Francis B. Morris, Villa Nova, Pa., will let contract during Sept. for \$50,000 masonry residence; 2 stories and tower, 74x78 ft., oak and tile floors, pile and conc. foundation, Cuban tile roof; L. W. Butchart, Archt., S. E. Sixth Court, (lately incorrectly reported Archt.-Contr.), Fort Lauderdale. 5-15

Fla., Miami Beach—Richard Massey, 2374 N. Bay Rd., has low bid at \$14,750 from Continental Construction Co., 1655 Lenox Ave., for music room addition to residence; Kiehnle & Elliott, Archts., Seybold Bldg., Miami.

Ga., Atlanta—Lindsey Hopkins, Healey Bldg., purchased dwelling, Pace's Ferry Rd.; remodel; Cooper & Cooper, Archts., Bona Allen Bldg.

Ga., Atlanta—Hoke Smith, Grant Bldg., receiving bids for \$35,000 residence, Peachtree-Battle Ave. and Howell Mill Rd.; brick, stone trim, 2 stories and basement, hollow tile, Indiana limestone trim, tile and marble wainscot, cement, hardwood and tile floors, Buckingham slate roof, steam heat; Pringle & Smith, Archts., Norris Bldg.; following contractors estimating: Norwood Griffin; Gilbert Beers, both Bona Allen Bldg.; Wagar & Co., Norris Bldg.; Flagler Co.; Christian & Bell; T. C. Wesley & Son, all Red Rock Bldg.; Pittman Construction Co., Rhodes Bldg.; W. B. Hiers, Courtney Drive; W. P. Francis, 201 Luckie St., N. W.

Ga., Atlanta—Chas. L. Thomas, 2554 Peachtree Rd., erect \$12,000 residence, Haynes Mount; brick veneer, 2 stories, conc. footings, hardwood and tile floors, slate or tile floors; J. M. Russell, Archt., Standard Bldg.; soon let contract.

Ky., Owensboro—Mrs. Sally R. McAtel erect \$15,000 Colonial type residence; Frank E. Fowler, Archt., Furniture Bldg., Evansville, Ind.

La., New Orleans—Goldstein, Spence & Leaderman Investment Co. erect \$10,000 dwelling, 975 Thoro Blvd.; brick veneer, 2 stories.

La., New Orleans—Weiss, Dreyfous & Seifert, Archts., Maison Blanche Bldg., receiving sub-bids for brick veneer dwelling, Country Club Gardens; 1 story and basement, oak and rubber floor, ornate iron, comp. and tile roof, sheet metal work, waterproofing.

La., New Orleans—P. Corona, 1800 Newton St., Algiers, receives bids May 30 for double residence, Behrman Ave. and DeArmas St.; asbestos roof.

Md., Baltimore—Palmer & Lamdin, Archts., 513 N. Charles St., drawing plans for Georgian type residence, Belvedere Ave. near Charles St. Ave.; white painted brick, 3 stories, 3 baths, Carrier Weathermaker warm air heating system.

Md., Baltimore—Harry Page, 304 Ilchester Ave., erect shingle residence, Thornhill Rd. near Tilbury Way, after plans by Wrenn, Lewis, Westenhaver & Jencks, Archts., Title Bldg. 4-17

Md., Baltimore—Wm. Fallon, 6 Elmhurst Road, erect shingle residence, Witherspoon Rd.; Palmer & Lamdin, Archts., 513 N. Charles St.

Mo., Farmington—Carlyle Rozier, W. Columbia St., remodel residence; Reither & Lindsay, Archts., H. & H. Bldg., Cape Girardeau.

Mo., Farmington—Fred Schramm erect mott brick residence; 1½ stories and basement, oak floors, asbestos slate roof, tile bath, steam or hot water heat; drawing plans.

Mo., Kansas City—F. Hunt erect \$10,000 residence, 5100 Sunset Drive.

Mo., Kansas City—Peter Larson, 2027 Elmwood St., erect \$10,000 residence, 1218 W. 63rd St. Terrace.

Mo., St. Louis—Little Flower R. C. Church, Rev. Jos. Tammany, Pastor, erect brick rectory, Arch Terrace and Boland Place; 2 stories and basement; Hellmuth & Hellmuth, Archts., Commercial Bldg.

Mo., St. Louis—Frank W. Hilliard, care Marcel Boucault, Archt., Ambassador Bldg., erect brick residence, Lake Forrest; 2 stories and basement, 50x76 ft.

Mo., St. Louis—Stewart D. Flanagan, Boatman's Bk. Bldg., erect brick residence, Holly Hills; 2 stories and basement, about 55x36 ft., hardwood floors, tile and marble work, steel sash, slate roof.

Mo., Webster Groves, St. Louis—Wm. L. Jackson, Archt., Buder Bldg., has taken bids on brick dwelling, Webster Hills; 2 stories and basement, 29x41 ft., oak floors, marble and tile work, Sani-Onyx wainscot, slate roof, hot water heat, oil burner.

Mo., Windsor—W. S. Bowen erect \$12,000 residence; semi-fireproof, brick, 1 story, 48x42 ft., oak floors, asbestos roof, hot water heat; LeRoy Parrish, Archt., 115½ W. High St., Jefferson City.

N. C., Albemarle—D. A. Holbrook erect residence, Pee Dee Ave.

Tenn., Bristol—Henry Barker erect \$30,000 stone veneer residence; 1 story, 112x50 ft., hardwood floors, tile baths, comp. or tile roof; Geo. Mahan, Jr., Archt., Manhattan Bk. Bldg., Memphis.

Tenn., Chattanooga—J. W. Card, Rossville Blvd., has permit for \$12,000 residence, 1506 Shady Circle; Colonial type, brick, 2 stories, 7 rooms.

Tenn., Knoxville—Woodlawn Development Co., care McLean, Rector & Scott, 615½ Market St., erect 6 dwellings, Lindbergh Forest; \$60,000.

Tenn., Memphis—L. H. Davidson, Route 6, Box 529, considers rebuilding burned residence.

Tenn., Memphis—J. M. Cook, 710 Stonewall St., erect brick veneer residence, Colonial Gardens; 1 story, 43x56 ft., oak floors, tile bath, comp. roof; Claude Northern, Archt., Fidelity Bk. Bldg.

Tenn., Memphis—John Sneed Williams, Sr., 1685 Northern Parkway, erect \$20,000 stone residence; 2 stories, 85x55 ft., hardwood floors, tile baths, comp. or tile roof; Geo. Mahan, Jr., Archt., Manhattan Bk. Bldg.; drawing plans.

Tex., Dallas—W. A. Randolph, 6334 Velasco St., has permit for 2 brick veneer duplexes, 6024-27 Elliott St.; 12 rooms; \$13,000.

Texas—Del Monte Development Co., Inc., Thos. T. Taylor, Pres.-Mgr., call bids in about 60 days for number bldgs., connection with development of 648-acre tract in Zavalla County for town to be called Del Monte; 15 dwellings to be erected; W. N. Hagy, Archt., both 808 Maverick Bldg., San Antonio. 5-22

Tex., Fort Smith—F. S. Hofues, 2500 University Drive, has permit for \$17,000 brick veneer residence, 2323 Medford Court West.

Tex., Fort Worth—F. S. Hofues, 2500 University Drive, East, has permit for \$13,500 brick veneer residence, 2416 Winton Terrace East.

Tex., Fort Worth—Paul B. Ogle, 4741 Panola St., has permit for \$17,000 rock veneer residence, 3413 W. Cliff Rd.

Tex., Houston—H. Seltzer, 1901 Dennis St., erect 2 brick veneer dwellings, 2402-08 McDuffie St.; 2 stories, 12 rooms; \$10,000.

Tex., Houston—Real Estate Investment Co., Chronicle Bldg., has permit for 3 brick veneer dwellings, 2012-14 Forest Hill and 2023 Esperanza Sts.; 5 and 6 rooms. \$11,000.

Tex., Houston—H. McCormick has permit for \$10,000 residence, 3448 Oakdale St.; brick veneer, 7 rooms.

Tex., Houston—H. Seltzer, 1901 Dennis St., has permit for 2 brick veneer dwellings, 2402-08 McDuffie St.; 12 rooms; \$10,500.

Tex., Lockhart—Allie Mohle have plans completed about June 1 for Spanish type residence; frame and stucco, 1 story, 10 rooms, 2 baths, hardwood and tile floors, metal lath and plaster; Jeremiah Schmidt, Archt., New Braunfels. 3-20

Tex., McAllen—Borderland Orchard Co., J. A. Hawkins, Pres., erect residence in Rio Grande Valley.

Tex., San Antonio—Mrs. Sophia Abdo, 1304½ W. Commerce St., erect brick and rein. conc. residence, Pinto and W. Houston St.; 1 story, 8 rooms; Herff & Jones, Archts., San Antonio Loan & Tr. Bldg.

Tex., San Antonio—Mrs. Eloise T. Woodhill, care H. B. Thompson, Archt., Alamo Bk. Bldg., receiving bids by invitation for English type residence, 100 block N. Gramercy St.; whitewashed brick veneer, 2 stories, 9 rooms, 2 baths, 2-car garage and servants' quarters; Fred Gaubatz, Asso. Archt., Alamo Bk. Bldg. 4-10

Tex., Victoria—A. W. Krueger and V. L. Griffin plan umber dwellings, connection with subdivision development.

Va., Newport News—Nelson T. Overton opens bids June 3 for brick and stone residence; Colonial type, 2 stories; Herbert W. & John A. Simpson, Archts., Board of Trade Bldg., Norfolk; Marsteller Construction Co., Dickson Bldg., Norfolk, estimating.

Government and State

Ala., Sheffield—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., has low bid at \$63,950 from Samford Bros., Inc., 301 Washington Ave., Montgomery, Ala., for post office; brick, stone trim 2 stories. 5-15

Ark.-Tex., Texarkana—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., probably call for bids about July 1 for \$450,000 post office.

D. C., Washington—Congress passed bill creating National Institute of Health, carrying \$750,000 appropriation for sites and bldgs., including additional story on old hygiene laboratory of U. S. Public Health Service.

D. C., Washington—Architect of The Capitol, David Lynn, has low bid at \$120,700 and \$39,700 from C. H. Tompkins Co. for clearing site, excavating and foundation work for \$7,500,000 office bldg. for House of Representatives; plans by Allied Architects of Washington, Inc., 16 Jackson Place, N. W.; T. N. Marshall, Struct. Engr., 1341 Connecticut Ave., N. W.; G. A. Weschler, Mech. Engr., 16 Jackson Place. 5-22

Ky., Frankfort—State Sinking Fund Comsn. Clegg Coleman, State Auditor, selected Frankel & Curtis, Hernando Bldg., Lexington, as architects for rebuilding east wing of Old Capitol damaged by fire; \$49,000. 5-8

Ky., Louisville—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., probably call for bids bet. Aug. 1 and Aug. 15 for \$2,500,000 Federal bldg., Broadway from Sixth to Seventh Sts.; Greek type, stone, 4 stories, 420x340x387 ft.; post office on ground floor; court room, internal revenue dept., etc., above. 5-8

La., Bogalusa—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., reported, call for bids by June 20 for \$130,000 Federal Bldg. 12-20

La., New Orleans—Mrs. John A. Mangt, 311 N. O. Bank Bldg., erect \$20,000 bldg., Carrollton Ave. near Oak St., to be leased to Government for post office; tile roof, frame and stucco, 1 story and mezzanine; Rathbone DeBuys, Archt., Hibernia Bk. Bldg. 5-22

Md., Baltimore—Geo. W. Wanner, 810 N. Calvert St., erect bldg., Hamilton Ave. and Hampnett St., to be leased to Government for Hamilton Station post office quarters; brick, 1 story, 25x87 ft. inside, with 20x25-ft. basement; cost, including equipment, \$16,000 to \$18,000. 4-3

Miss., Biloxi—National Guard, Adj. Gen. J. M. Hairston, Jackson, will purchase camp site, Back Bay; Government probably expend about \$135,000 for buildings.

Miss., Jackson—State, Theo. G. Bilbo, Gov., selected Vinson B. Smith, Jr., Gulfport, as architect to remodel governor's offices, State Capitol; probably call for bids in about 1 month.

Mo., Jefferson City—State, Henry C. Caulfield, Gov., selected Wm. B. Ittner, Board of Education Bldg., St. Louis, as architect for \$750,000 intermediate reformatory near Jefferson City. 2-20

Mo., Sedalia—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., reported, \$200,000 for bids July 7 (tentative date) for \$200,000 post office. 7-12-28

Tenn., Jackson—City Comsn. authorized election on \$75,000 armory bonds; State to appropriate additional \$75,000.

Tenn., Kingsport—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., reported, call for bids about June 15 for post office; J. E. Miller, Postmaster, Kingsport.

Tex., Fort Sam Houston, San Antonio—Constructing Quartermaster, Fort Sam Houston, Capt. Will R. White, has low bid at \$855,300 from Bansbach Bros., 248 W. Josephine St., San Antonio, for field artillery regimental barracks and 2 field artillery battalion barracks; rein. conc. and bearing tile, 3 stories and basement, 95x45.6 ft. and 84x208 ft., conc. linoleum and terrazzo floors, rein. conc. foundation, cast stone work, built-up and Mission tile roof, steel sash and trim, hollow tile, wire glass, brass and bronze work. 5-1

Tex., Pleasanton—F. B. Ricks erect bldg. for post office; semi-fireproof, 1 story, 25x49 ft., tile, stucco and face brick; Wilder & Smith, Archts., Texas Theatre Bldg., San Antonio.

Va., Alexandria—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., opens bids June 30 for construction (except elevator) of custom house, post office, etc.; 3 stories, 88x190 ft. 12-12

W. Va., Weston—Treasury Dept., Jas. A. Wetmore, Act. Supvg. Archt., Washington, D. C., plans to purchase site for post office after July 1; probably cost \$150,000.

Hospitals, Sanitariums, Etc.

Ark., Helena—City defeated \$150,000 hospital bonds. 4-3

D. C., Washington—Following contractors estimating on nurses' home, Gallingen Hospital, bids June 3 by District Comr., Dist. Bldg., Boyle-Robertson, Inc., Evans Bldg.; Arthur L. Smith Co., 2423 Pennsylvania Ave., N. W.; Skinner & Garrett, 1719 1 St., N. W.; George E. Wyne, 2525 Pennsylvania Ave., N. W.; Bahen & Wright, 916 Rhode Island Ave., N. E.; W. E. Mooney, 2539 Pennsylvania Ave., N. W., all Washington; J. A. Jones Construction Company, Commercial Bank Bldg., Charlotte, N. C.; W. P. Rose Construction Company, N. James St., Goldsboro, N. C.; Castor & Castor, 4205 New Utrecht St., Brooklyn, N. Y.; National Construction Co., Inc., Glenn Bldg., Atlanta, Ga.; North-Eastern Construction Co., 6 W. Madison St., Baltimore, Md. 5-15

D. C., Washington—Casualty Hospital raising \$50,000 to pay off indebtedness and purchase additional equipment.

D. C., Washington—Following contractors estimating on center unit of nurses' quarters and utilities, Walter Reed General Hospital, bids June 12 by Constructing Quartermaster, Army Medical Center; Hallbauer-LaBahn, Inc., 844 Rush Ave., Chicago, Ill.; Schneider-Splidt Co., 1416 F St., N. W.; DeSibour Construction Co., 1200 Fifteenth St., N. W.; Bruce E. Clark, 1510 Nineteenth St., N. W.; Boyle-Robertson, Inc., Evans Bldg.; Skinner & Garrett, 1416 F St., N. W.; Arthur L. Smith & Co., 2539 Pennsylvania Ave., N. W.; George E. Wyne, 2525 Pennsylvania Ave., N. W.; W. E. Mooney, 2539 Pennsylvania Ave., N. W., all Washington; Henry L. Maa & Sons, Inc., 1119 Ensor St.; North-Eastern Construction Co., 6 W. Madison St., both Baltimore, Md.; W. P. Rose Co., N. James St., Goldsboro, N. C.; J. A. Jones Construction Co., Commercial Bank Bldg., Charlotte, N. C. 5-22

Fla., Tampa—Dr. W. H. Dyer, 2116 E. Broadway, having preliminary plans drawn by Couch & Parslow, 1006 Florida Ave., for brick and steel frame hospital, Marion and Seventh Ave.; rein. conc. floor constr., 2 and 3 stories, 120x45 ft., steam heat, built-up roof, solarium. 4-3

Ga., Atlanta—St. Joseph's Infirmary, Baker and Courtland Sts., N. E., remodel and erect additions to bldg.; \$150,000; brick, stone trim, tile and terrazzo floors, comp. roof; enlarge chapel, operating rooms, etc.; Richard W. Alger, Archt., Candler Bldg.

Ky., Ashland—King's Daughters Hospital, Ben Williamson, Sr., member, Bldg. Comm., soon select architect for remodeling and enlarging hospital; \$100,000.

Ky., Valley Station—Waverly Hill Sanatorium Bd., W. R. Livermore, Sec., erect bldg. for children and bldg. for negroes after plans by D. N. Murphy & Bros., Archts., Louisville Tr. Bldg., Louisville; \$365,000. 5-8

Miss., Meridian—Building Coms., W. C. Trotter, Sec., New Capitol Bldg., Jackson, lets contracts June 5 for repairs, East Mississippi State Hospital; \$12,000; carpenter repairs to 2 bldgs., conc. floors in 1 bldg., wiring in 8 bldgs. and new radiators in 3 bldgs.; plans from R. C. Springer, Archt., Rosenbaum Bldg., Meridian and on file with Mr. Trotter.

Miss., Pascagoula—Jackson County Bd. of Supervs., Dr. R. G. Lander, member, hospital comm., selected A. M. Shaw, Gulfport, to draw preliminary plans for hospital; 20 rooms.

Miss., Philadelphia—Neshoba County votes June 6 on \$20,000 bonds to purchase site and erect hospital. Address County Bd. of Supervisors.

Mo., Excelsior Springs—Following firms estimating on officers' duplex quarters, U. S. Veterans Hospital, bids June 10 by U. S. Veterans Bureau, Arlington Bldg., Washington, D. C.; General-Virginia Engineering Co., First Natl. Bk. Bldg., Newport News, Va.; Murch Bros. Construction Co., Ry. Exch. Bldg.; Humes-Deal Co., Arcade Bldg., both St. Louis, Mo.; W. P. Thurston Co., 301 S. Fourth St., Richmond, Va.; Samford Bros., Inc., 301 Washington Ave., Montgomery, Ala.; Material—Crane Co., 1225 1 St., N. W., Washington; Mesker Bros. Iron Co., 421 S. Sixth St.; Johns-Manville Sales Corp., 17th and Locust Sts., both St. Louis; Richmond Fireproof Door Co., Richmond, Ind.; Paint—Walter M. Winslow, Le Mars, Iowa; Boiler—Freeman Manufacturing Co., Racine, Wis.; Kewanee Boiler Works, Kewanee, Ill.; Windows, Crescent Steel Co., 120 E. Loughborough Ave., St. Louis; Elect. Work—Ray A. Phelps, Beloit, Wis.

N. C., Elkin—Hugh Chatham Memorial Hospital Bd., Rev. L. B. Abernathy, Pres., probably have plans ready for bids within 2 weeks for \$80,000 fireproof hospital; about 35 beds; Harold Macklin, Archt., Realty Bldg., Winston-Salem. 11-21

Okl., Muskogee—Following firms estimating on utility bldgs., radial brick chimney, water tank, etc., U. S. Veterans Hospital, bids June 10 by U. S. Veterans Bureau, Arlington Bldg., Washington, D. C.; General-Virginia Engineering Co., 322 28th St., Newport News, Va.; Ring Construction Co., Wesley Temple Bldg., Minneapolis, Minn.; Samford Bros., Inc., 301 Washington St., Montgomery, Ala.; W. R. Grimshaw Co., Kennedy Bldg., Tulsa, Okla.; Ballard, Sprague & Co., Inc., 25 E. 26th St., New York; Murch Bros. Construction Co., Ry. Exch. Bldg., St. Louis, Mo.; Hallbauer-LaBahn, Inc., 844 Rush Ave., Chicago, Ill.; Batson-Cook Co., West Point, Ga.; Dinsmore-Kelly Construction Co., Box 887; Davis-Williamson Co., both Muskogee; W. P. Thurston Co., 301 S. Fourth St., Richmond, Va.; Plumbing and Heating—A. T. Hogle, 106 Callahan St.; O'Connor Co., 411 N. 3rd St., both Muskogee; Plumbing—Crane Co., 1225 1 St., N. W., Washington; Chimney—Continental Chimney Company, 127 North Dearborn Street, Chicago; Rust Engineering Corporation, Pittsburgh, Pa.; H. R. Heinicke, Inc., Indianapolis, Indiana; Boiler—Continental Contracting Co., Fort Dodge, Iowa; Burnley Machinery Co., Liberty Natl. Bldg., Oklahoma City, Okla.; Kewanee Boiler Corp., Kewanee, Ill.; Freeman Manufacturing Co., Racine, Wis.; Stanwood Corp., Third and Philadelphia St., Cincinnati, O.; other estimators include: Mesker Bros. Iron Co., 421 S. Sixth St., St. Louis; Decatur Iron & Steel Co., Decatur, Ala.; Truscon Steel Co., Hill Bldg., Washington; David Lupton's Sons Co. (material), Shoreham Bldg., Washington; Pittsburgh-Des Moines Steel Co., Pittsburgh; Elgin Softener Corp., Elgin, Ill.; Richmond Fireproof Door Co. (material), Richmond, Ind.; Stearns-Roger Manufacturing Co., Denver, Colo.; Crescent Steel Co. (windows), Synd. Tr. Bldg., St. Louis; Schultz & Fuhring, Inc. (elect. work), 1 Erie St., Milwaukee, Wis.; Johns-Manville Sales Corp., 17th and Locust Sts., St. Louis. 5-8

Tex., Houston—Dr. J. M. Beall, Broadway and La Porte St., plans clinic and rest sanitarium, Lawndale St., Lawndale Court; work probably not start until first of 1931.

Tex., Rusk—State Bd. of Control, Claude D. Teer, Chmn., Austin, receives bids June 9 for \$80,000 ward and \$25,000 remodeling work on negro ward, State Hospital for Insane; brick, conc. frame, 2 stories; Page Bros., Archts., Austin Natl. Bk. Bldg., Austin. 5-8

Hotsis and Apartments

Ala., Anniston—Alabama Hotel Co., Ross Blackmon, Smith Bldg., having preliminary plans prepared by Lockwood & Poundstone and Edw. F. Billie, Asso. Archts., Marietta Bldg., Atlanta, Ga., for \$115,000, 6-story and basement, rein. conc., brick and tile, 50-room addition to hotel; built-up roof, stone trim. 5-15

Ark., Hot Springs National Park—Arlington Hotel Co., W. E. Chester, Pres.-Gen. Mgr., having plans prepared by Mann & Stern, Donaghey Bldg., Little Rock, for brick and rein. conc. 60-room annex and second-story, fireproof addition to hotel garage; \$125,000. 5-15

Fla., St. Petersburg—George A. Fuller Co., Fuller Bldg., New York, recently reported acquired Jungle Hotel and golf course and planning to build clubhouse and other improvements, advises that no additions or improvements are planned. 5-22

Ga., Dalton—Hotel Dalton, W. C. Bowen, ready for bids by June 2 (letting date not determined) for 1-story, brick, 28-room addition to 4-story brick hotel; comp. roof, wood floors; A. Ten Eyck Brown, Archt.; A. Barilli, Jr., Asso. Archt., both Forsyth Bldg., Atlanta.

La., Lafayette—Clifton Latiolas receives bids June 17 for addition and alterations to electric work, plumbing, steam system with hotel; improvements to include masonry, oil burning equipment, painting, plastering, marble work, waterproofing, tile floors and walls, cast stone, sheet metal work, sky lights, metal marquise, struc. steel, ornate iron work, slate and comp. roof; Wm. T. Nolan, Archt., Canal Bank Bldg., New Orleans.

Miss., Meridian—W. E. Stokes, 2400 Ninth St., ready for bids in few days for 3-story combination hotel-apartment, Ninth St. and 24th Ave.; brick, fireproof; 6 apartments on first floor; 46 hotel rooms on second and third floors; steam and natural gas heat.

Mo., St. Louis—Skinner Northwood Investment Co., R. H. McRoberts, Paul Brown Bldg., ready for bids about June 3 for \$1,500,000, 16-story and basement, brick, terra cotta and rein. conc., fireproof, 105-apartment, Skinner Blvd. and Southwood Ave.; 100-car garage in basement and first floor rear; hardwood floors, steam heat; F. G. Avis, Archt., Big Bend Road. 3-6

N. C., Marion—Lake Tahoma Corp. soon start work on 50 to 75-room hotel, 25-room lodge building, remodel casino on Lake Tahoma property, 6 miles from Marion.

Tex., Dallas—Mrs. Mabel Elliott, 118 N. Mont Clair St., has permit for two \$12,500, brick veneer, 8-apartments, 3903-05 Cole St.

Tex., Fort Worth—Dr. W. C. Rountree, 824 Evergreen St., Austin, plans apartment to replace recently burned structure.

Tex., Lamesa—A. A. Hutton erect 29-room addition to Dal Paso Hotel.

Va., Clintwood—J. C. Smith promoting erection of 2-story brick hotel.

Miscellaneous

Fla., Miami Beach—Surf Club, Inc., Maj. I. Barton, Sec., receives bids June 2 at office Russell Pancoast, Archt., both masonic Bldg. for clubhouse, restaurant, cabanas, swimming pool, locker rooms, etc., 92nd St. and Ocean; \$500,000; following contractors estimating: Continental Construction Co., Exchange Bldg.; Gunn & Goll, Inc., Security Bldg.; Harrison Construction Co., 500 N. E. 45th St.; O'Neill-Orr Construction Co., 212 N. E. 4th St.; St. John Construction Co., 629 N. W. 7th St.; John B. Orr Construction Co., N. E. 6th St., all Miami; John L. Berry, 1327 20th St., Miami Beach. 4-3

Okl., Oklahoma City—Oklahoma Club, H. J. Forester, Mgr., recently reported planning to call for bids in June for \$200,000 addition, advises that building program will not start until early spring of 1931; Hawk & Parr, Archts. First Natl. Bank Bldg. 5-15

Miss., Jackson—Kappa Delta Sorority, Mrs. Duarine Morgan, Chmn., Bldg. Comm., receives bids June 3 for 1-story, brick veneer sorority house; tile roof, hardwood floors; J. Frazier Smith, Archt., Goodwyn Institute Bldg., Memphis, Tenn. 5-8

Mo., St. Louis—Terminal Railroad Assn. Henry Miller, Pres., applied for permit to build tracks crossing Poplar St. between 12th Blvd. and 13th St. in connection with proposed \$5,000,000, 16-story, steel and conc. merchandise mart building, Twelfth Blvd. and Spruce St., to be operated by St. Louis Mart, Inc., Lawrence H. Whiting, Pres. of Boulevard Bridge Bank, and Chmn. of American Furniture Mart, 666 Lake Shore Drive, both Chicago; Harold M. Bixby, Pres. of St. Louis Aviation Corp., Security Bldg., and others; building to contain between 1,000,000 to 1,250,000 sq. ft. floor space, used for warehouse, mart, exhibition and office purposes; Walter J. Knight & Co., Consig. Engrs., Wainwright Bldg.

Tex., Beaumont—Beaumont Country Club plans erecting men's locker room, repairs to club building, improvements to golf course, etc.; \$125,000.

Tex., Canadian—Panhandle-Plains Historical Society, H. E. Hoover, Chmn., Comm., plans museum building; \$50,000.

Va., Lynchburg—W. D. Diuguid's Inc., 616 Main St., erect \$50,000 mortuary, 1016 Rivermont Ave.

Railway Stations, Sheds, Etc.

Ga., Macon—Central of Georgia Ry., C. E. Weaver, Engr., Savannah, erect brick warehouse; comp. roof.

Okla., Oklahoma City—St. Louis-San Francisco Ry. Co., F. G. Jonah, Ch. Engr., St. Louis, and Chicago Rock Island & Pacific Ry. Co., C. A. Morse, Ch. Engr., Chicago, ready for bids in about 10 days for \$2,500,000 union station; 360x22 ft., Bedford limestone, Moorish design; 2 platforms 1300 ft. long and one 1000 ft. long to be constructed back of station and covered with sheds. 5-27

Schools

Ark., Booneville—Bd. of Education plans \$60,000 school.

Ark., Decatur—Benton County Bd. of Education, Bentonville, erect \$15,000, brick veneer school addition; plans by State Dept. of Education, Little Rock.

Ark., Hope—School Bd. plans high school building.

Ark., Gentry—Benton County Bd. of Education, Bentonville, erect \$35,000 grammar school addition; plans by State Dept. of Education, Little Rock.

Ark., Little Rock—Girls' Industrial School, Ben Brickhouse, Chmn., Bldg., Comm., Southern Trust, Bldg., soon ready for bids for \$20,000, 1-story, 125x60 ft., brick administration building at Alexander; H. Ray Burks, Archt., Wallace Bldg.

Ark., Little Rock—Pulaski County Bd. of Education having plans prepared by Thompson, Sandra & Ginocchio, Hall Bldg., for 1-story school; comp. roof, wood floors, steam heat.

D. C., Washington—Department of Interior, John H. Edwards, Asst. Sec., Room 6117, Interior Dept. Bldg., receives bids, in duplicate, June 18 for (1) furnishing all labor and materials for construction (including mechanical equipment) of Buildings Nos. 1, 2 and 3 of Women's Dormitory group at Howard College; work to include excavating, rein. conc. construction, brick work, stone work, floor and wall tile, misc. iron and steel work, slate and metal roofing, lathing and plastering, carpentry, electric elevators, plumbing, heating, electrical installation, finish grading, conc. walks, landscaping; (2) kitchen equipment, furniture, shades, draperies, etc., furnished and installed complete; plans from Clerk of Dept.; A. I. Cassell Archt. for University. 1-16

Fla., Miami Beach—St. Patrick's Church, Rev. William Barry, 39th St. and Garden Ave., erect first unit of St. Patrick's High School; 17x41 ft., garage, 2 stories, 33x33 ft., rein. conc., conc. block and stucco; Gerald A. Barry, Archt., W. E. Weitman, Mech. Engr., both 180 N. Michigan Ave., Chicago bids in.

Fla., Panama City—Bay County Special Tax School Dist. No. 4 votes May 30 on \$65,000 bonds.

Ga., Atlanta—Fulton County Bd. of Education, Jere Wells, Supt., receives bids June 3 for 1-story and basement, auditorium and 6-classroom school in Ben Hill Dist.; brick veneer, comp. roof, wood floors; Wm. J. J. Chase, Archt., 140 Peachtree St., N. E.

Ga., Auburn—Barrow County Bd. of School Trustees, Thos. W. Etheridge, Sec.-Treas., Carl, remodel dormitory and administration building formerly owned by Baptist Board; brick, comp. roof.

Ga., Blue Ridge—Following contractors estimating on \$45,000, 1-story and basement, brick, 14-classroom and auditorium school, bids June 2 by Bd. of Education, Ed. Johnson, Sec.; Donald McIver; Crockett & Spruill, both Atlanta; W. C. Hinton, Cordele; J. F. DuPree & Son; Smith & Brown, both Rome; Barrett Construction Co.; Brumlow Construction Co., both Dalton; Daniell Construction Co.; Newman Lumber Co., both LaGrange; Copper Hill Lumber Co., Copper Hill, Tenn.; Duggan & Wood, Athens, Tenn.; J. F. Holley, Ensley, Ala.; Samford Bros., Inc., 301 Washington Ave., Montgomery, Ala.; Snellings Lumber Co., Phenix City, Ala.; Lockwood & Poundstone, Archts.; Edw. F. Billie, Asso. Archt., both Marietta Bldg., Atlanta. 5-22

Ky., Louisville—Bd. of Education, Samuel D. Jones, Bus. Mgr., has gift of \$300,000 from Theodore Ahrens for addition to Ahrens' Trade School.

Ky., Melber—Graves County Bd. of Education erect \$10,000, 1-story, brick veneer school on Graves-McCracken County line.

La., Alluvial City—Following contractors estimating on \$20,000, 1-story and basement, 50x90-ft., rein. conc., brick and tile school,

bids June 3 by St. Bernard Parish School Bd.: J. A. Haase, Jr., 916 Union St.; J. A. Petty & Sons, Inc., Godchaux Bldg.; Gitz Construction Co., Balter Bldg.; Geary-Oakes Co., Queen and Crescent Bldg.; J. M. De Fraites, Inc., Canal Bank Bldg.; Caldwell Bros., 816 Howard Ave.; Raimann Construction Co., Maritime Bldg., all New Orleans; J. C. Bourg, Arabi; Wm. R. Burk, Archt., Balter Bldg., New Orleans. 5-22

La., Amite—Tangipahoa Parish School Bd., W. J. Dunn, Supt., erect \$20,000 school in Dist. No. 104; \$20,000 bonds voted.

La., Cameron—Cameron Parish School Bd. receives bids June 20 for 2-room addition to Johnson Bay school and 3-room addition to Church school.

La., Monroe—City Commission receives bids June 30 for \$450,000, 3-story, rein. conc., brick, and limestone trim high school; separate bids for mechanical work; 325x75 ft. with wing 258x145 ft., contain gymnasium and auditorium to seat 3000 people; J. W. Smith & Associates, Archts., Ouachita Natl. Bank Bldg. 1-30

La., Mt. Hermon—Washington Parish School Bd., D. H. Stringfield, Supt., erect high school; \$15,000 bonds voted. 4-24

La., Natchitoches—Louisiana State Bd. of Education, Baton Rouge, receives bids June 16 at office Favrot & Livaudais, Archts., Hibernia Bk. Bldg., New Orleans, for 1-story, 93x123 ft., rein. conc., brick, east stone trim auditorium and gymnasium; asbestos roof, corrugated glass skylights; seating capacity 2000 people; following contractors estimating: J. A. Petty & Sons, Inc., Godchaux Bldg.; Caldwell Bros., 816 Howard Ave., both New Orleans; W. J. Quick, 424 Bilbo St.; Knapp & East, Kaufman Bldg., both Lake Charles; E. E. Rabalais & Son, Bunkie; Anzalone Construction & Supply Co., Independence; A. C. Stewart, 810 E. Boulevard, Baton Rouge; Tudor & Ratcliff, Commercial Bank Bldg., Alexandria.

La., Shreveport—Centenary College receives bids May 30 for \$50,000, 3-story, rein. conc., brick and stone trim dormitory; Clarence W. King, Archt., Giddens-Lane Bldg. 12-19

Md., Baltimore—City votes in November on \$1,500,000 loan for school for handicapped children: H. J. Leimbach, Supvg. Engr., Improvement Coms.

Miss., Bay St. Louis—St. Joseph Academy received bids May 29 for 2-story, 90x110 ft., brick gymnasium, auditorium, classroom and music room addition; E. V. Sporl, Archt., Vincent Bldg., New Orleans.

Miss., Biloxi—School Bd. plans vocational school for negroes.

Miss., Cumberland—Cumberland Consolidated School Dist. erect school; \$12,000 bonds voted.

Miss., Gulfport—Fernwood Rural Separate School Dist. Trustees, C. R. Switzer, Sec. Route 7, have low bid at \$15,300 from A. Ziegendorfer for 1-story, brick, 4-classroom and auditorium school; J. H. Wallis, Archt. 5-8

Miss., Horn Lake—Horn Lake School Dist. Trustees, F. R. Wright, Chrm., receive bids June 14 for \$35,000, 1-story, 196x120 ft., rein. conc., brick, stone trim high school; asphalt roof; N. W. Overstreet, Archt., Miss Fire Insurance Bldg., Jackson.

Miss., Indianola—Indianola Separate School Dist. Trustees, W. W. Lockard, Supt., receive bids June 2 for 1-story, 52x181 ft., brick veneer school; comp. roof; plans from Regan & Weller, Archts., Derman Bldg., Memphis, Tenn.

Miss., Jackson—Bd. of Education, E. L. Balley, Sec., receives bids June 2 for improvements to Jr.-Sr. High School: C. H. Lindsley, Archt., Edwards Hotel Bldg.

Miss., Smithville—Smithville Special Consolidated School Dist. votes June 2 on \$30,000 bonds for school and teacherage.

Miss., Woolmarket, R. D. from Biloxi—School Bd., C. H. Emerich, receives bids June 4 for \$24,000, 1-story, rein. conc. and brick school; separate bids on construction, electrical, plumbing and heating; John T. Collins, Archt., Biloxi. See Want Section—Building Material and Equipment.

Mo., Agency—Agency Consolidated School Dist. votes May 31 on \$28,000 bonds for high school; D. L. Staggs, Sec., School Bd.

Mo., Columbia—Stephen's College, J. M. Wood, Pres., having plans prepared by Jamison & Spearl, Arcade Bldg., St. Louis, for \$250,000, 2-story, brick library. 12-12

Mo., Joplin—Bd. of Education, Dr. J. J. Burnett, Pres., receives bids June 3 for \$90,000, 2-story, brick Emerson Grade School; Felt, Dunham & Kreihen, Archts., Balcony Bldg., Kansas City; also erect \$200,000, 2 and 3-story, brick North Jr. High School and \$45,000, 1-story, brick gymnasium and auditorium addition to East Jr. High School. 3-20

Mo., Lilbourn—Bd. of Education, T. A. McClain, Pres., erect \$30,000, 2-story, brick school addition; Bonsack & Pearce, Inc., Archts., 411 Olive St., St. Louis; bids in. 5-1

Mo., Maryville—Bd. of Education, R. F. Hofmer, Pres., receives bids June 3 for \$110,000, 2-story, brick elementary school; Felt, Dunham & Kreihen, Archts., Balcony Bldg., St. Louis. 4-24

Mo., New Madrid—Bd. of Education, J. Sterns, Sec., ready for bids for 2-story and basement, 135x50 ft., brick, rein. conc., fireproof high school and \$15,000, 3-story and basement grade school; Bonsack & Pearce, Archts., 411 Olive St., St. Louis. 4-10

Mo., St. Louis—Washington University has gift of \$250,000 for endowment contingent upon about \$250,000 being raised to erect building for Department of Architecture.

Mo., St. Louis—Bd. of Education, A. A. Blumeeyer, Pres., 911 Locust St., has low bid at \$253,576 from Humes-Deal Co., Arcade Bldg., for 2-story, 200x35 ft., brick and rein. conc., fireproof, Gundlach School, Arlington and Semple Aves.; plumbing and sewerage, \$15,680. E. J. Rischer, 4134 Westminster St.; heating and ventilating, \$58,946, Peters-Eichler Heating Co., 1516 Pine St.; vacuum cleaning system, Koppen-Smith Heating Co., 2628 Olive St.; electric wiring, \$4275, Rick Electric Co., 1622 Chestnut St.; Wm. B. Ittner, Consig. Archt., Bd. of Education Bldg.

Mo., St. Louis—St. Louis University, Rev. James J. O'Regan, Dir. of Athletics, 221 S. Grand Blvd., erect Walsh Memorial Stadium; rein. conc., first unit to seat 15,000 people; plans by Osborn Engineering Co., 7016 Euclid Ave., Cleveland, Ohio; bids in.

Mo., Willard—Bd. of Education erect \$20,000, 4-classroom addition to school.

N. C., Durham—Durham County School Bd. plans \$25,000 school in Hillandale-Shambly community.

N. C., High Point—Bd. of School Comms., T. Wingate Andrews, Supt., erect Wm. Penn High School; Fred B. Klein, Archt., W. Washington St.; bids in.

N. C., Lexington—Davidson County Bd. of Education, S. G. Hasty, Supt., receives bids June 9 for high and grade school and for grade school in Consolidated Dist. No. 11; separate bids on heating, plumbing and equipment; plans from Percy Bloxam Co., Statesville Road, Salisbury. 5-22

Okl., Altus—Bd. of Education, Mrs. Elmer Garnett, Clk., erect \$150,000, 2-story, brick 16-classroom high school; also erect \$40,000 grade school; Tomini & Bramblett, Archts., 416 1/2 W. Main St., Oklahoma City. 3-27

Okl., Boise City—Bd. of Education, Union Graded Dist. No. 2, Orris L. McBride, Supt., having plans prepared by The Huseman Co., Chickasha, for \$25,000, brick school.

Okl., Felt—Bd. of Education, Orris L. McBride, Supt., Boise City, having plans prepared by The Huseman Co., Chickasha, for \$40,000 brick school.

Okl., Maud—Bd. of Education, Bert Harris, Clk., has low bid at \$89,833 from William Black, Okemah, for 2-story, 150x229 ft., brick, stone and rein. conc. high school; Albert S. Ross, Archt., Ada. 5-8

Okl., Norman—Bd. of Education, W. L. Gibbs, Pres., has low bid at \$47,000 from Bailey & Burns for Wurd School and at \$21,000 for addition to Home Economics Bldg.; low bid at \$11,500 from Barbour & Short for remodeling High School; Layton, Hicks & Forsythe, Archts., Braniff Bldg., Oklahoma City. 4-17

Okl., Oklahoma City—Bd. of Education, J. G. Stearley, Clk., receives bids June 2 for Sequoyah elementary school and additions to Wheeler, Edgemere and Putman Heights; Layton, Hicks & Forsythe, Archts., Braniff Bldg. 3-6

Okl., Oklahoma City—Bd. of Education, J. G. Stearley, Clk., has low bids from Tankersley Construction Co., Grain-Cotton Exchange Bldg., as follows for additions to 5 elementary schools: Bath, \$33,300; Dunbar, \$27,200; Harmony, \$27,800; Cleveland, \$23,850; Gatewood, \$27,300; also has low bid at \$21,176 from Harry Reynolds Co., Franklin Bldg., for Westwood school; Layton, Hicks & Forsythe, Archts., Braniff Bldg.; later will consider construction new school to be known as Stand Waite, in southwestern district; Jefferson Davis, in southeastern dist.; Shidler, and addition to Riverside school. 3-6

S. C., Columbia—University of South Carolina plans \$300,000 building to house school of education and demonstration high school; accommodate 300 pupils.

Tenn., Chattanooga—School Bd. soon ready for bids for \$30,000, 1-story, brick, 6-classroom, domestic science room and assembly hall school, Spears Ave. and Summer St.; Gordon L. Smith, Archt., Volunteer Bldg.

Tenn., Dickson—Bd. of Education, W. E. Luther, Supt., erect addition and improve Dickson High School; \$57,000; 2 wings, 40x75 ft.; gymnasium, 60x75 ft.; 2 stories, brick, wood floors, built-up roof, brick foundation; Dougherty & Gardner, Archts., Cotton States B'dg., Nashville; bids in.

Tenn., Memphis—American Missionary Society, 287 Fourth Ave., New York, erect \$25,000 addition to academic building of Le Mayne Institute, 607 Walker Ave.; Geo. Awsumb, Archt., Dermon Bldg., Memphis.

Tenn., Memphis—West Tennessee State Teachers' College, J. W. Brister, Pres., has plans by George Mahan, Jr., American Bk. Bldg., for \$225,000 science building.

Tenn., Paris—Henry County Bd. of Education, Jas. Richardson, Supt., plans \$50,000 addition to Grove School.

Tex., Austin—State Bd. of Control, Claude D. Terr, Chmn., receives bids June 6 for \$50,000, 2-story, 32x150 ft., brick, hollow tile, fireproof dormitory at Austin State School; stone trim, tile, cement and terrazzo floors; H. F. Kuehne, Archt., Littlefield Bldg. 5-15

Tex., Brownwood—Woodlawn Heights community plans vote on \$23,000 bonds for high school; address School Bd.

Tex., Ingleside—Ingleside Common School Dist., W. L. Humphreys, Sec., erect 1-story, rein. conc., tile and brick, addition to school; cement floors and steps; Hamon & Co., Archts., Medical & Professional Bldg., Corpus Christi; bids in.

Tex., Morse—Morse Ind. School School Dist., H. W. Forester, Sec., erect 1-story, brick school; Rittenberry & Carder, Archts., Amarillo; bids in. 5-3

Tex., Linden—Bd. of Education, C. E. Farmer, Supt., erect high school; bonds voted. 5-1

Tex., Mineral Wells—Bd. of School Trustees, Jesse Hayes, Pres., receives bids June 5 for \$75,000, 2-story and basement, 77x140 ft., brick and rein. conc. Sam Houston elementary school; separate bids for mechanical equipment; Elmer G. Withers, Holmes Bldg., Fort Worth, and A. B. Withers, Mineral Wells, Archts.; following contractors estimating: General—Wm. H. Southwell, 605 E. Second St.; Jas. T. Taylor, Natl. Bank Bldg.; Thos. S. Byrne, Fort Worth Natl. Bank Bldg., all Fort Worth; J. S. Murphy; W. W. Brassell, both Mineral Wells; Plumbing and heating—Reliable Plumbing Co., 4111 Camp Bowie Blvd.; P. Osborn, 1900 Fifth Ave., both Fort Worth; Koriot Plumbing & Heating Co., Sherman; McMurtie Plumbing Co.; K. B. Bertson Plumbing Co., both Mineral Wells; Electric—Goolsby Electric Co., 1022 Monroe St.; Ashe Electric Co., 505 Jones St.; Shotts Electric Co., 211 W. Eighth St.; McDonald Electric Co., 717 W. Magnolia St., all Fort Worth; E. C. Beatty Electric Co.; Williams Electric Co., both Mineral Wells.

Tex., Pennington—Pennington Ind. Dist. School Bd. erect \$30,000 school; bids in.

Tex., Runge—Runge Ind. School Dist., A. E. Outler, Sec., Bd. of Trustees, receives bids June 2 for \$100,000, 2-story, brick, steel and conc. school; Giesecke & Harris, Archts., Northwest Bldg., Austin. 5-15

Tex., San Felipe—San Felipe Ind. School Dist., Santos Garza, Pres., has low bid at \$34,900 from H. M. Hutchison, Eagle Pass Lumber Co., Del Rio, for 1-story, 55½x240 ft., tile, stucco and conc. school; T shape, auditorium 52x83½ ft.; Will N. Noonan Co., Archt., Builders Exchange Bldg., San Antonio. 5-22

Va., North Tazewell—Town voted \$13,000 bonds for school purposes; Judge A. C. Buchanan, Tazewell Circuit Court. 4-24

Va., Richmond—St. Joseph's Academy and Orphan Asylum at Hollybrook farm on Richmond-Washington highway ready for bids in about two weeks on \$1,000,000 plant of thirteen buildings consisting of 8 dormitories, chapel, administration building, school, gymnasium and heating plant; Romanesque architecture; 2 stories, fireproof, stone and terra cotta trim, tile roofs; Carneal, Johnston & Wright, Archts., Electric Bldg.; all water piping and sewer work completed, and architects now completing details of electrical distribution. 4-10

Va., Roanoke—Roanoke County Bd. plans addition to Washington Heights, Ogdan and Bent Mountain schools; \$60,000.

Va., University—University of Virginia, Dr. Edwin A. Alderman, Pres., erect \$300,000 football stadium to seat 23,000 people; plans

being prepared by John K. Peebles, 1111 West Princess Anne Road, Norfolk; R. E. Lee Taylor, Baltimore Trust Bldg., Baltimore; Edmund S. Campbell, head of McIntire School of Architecture, and Walter D. Blair, 15½ E. 61st St., New York, all alumni. 4-24

Va., Virginia Beach—Atlantic University, Dr. Wm. Moseley Brown, Pres., has low bid at \$143,774 from W. W. Thompson, 857 W. 46th St., Norfolk, for first unit to consist of academic building and dormitory to cost \$175,000, equipment \$25,000; academic building 50x115 ft., dormitory 45x90 ft., both 3 stories and basement, brick and conc.; B. L. Williams, Inc., Lansdale St., Norfolk, low bid at \$20,500 for plumbing and heating; Haycox Concrete Corp., 432 W. 21st St., Norfolk, completed foundations; Laurence B. Emmons, Archt., 117 East 60th St., New York; will operate university in these quarters pending selection of site for permanent structures. 5-1

W. Va., Charleston—Charleston Ind. Dist. Bd. of Education erect 6-room school in Magazine section.

W. Va., Huntington—Alumni Assn., Marshall College, plans 2-story, Colonial type Student Union Bldg.

Stores

Ark., Little Rock—Capital Hat Co., L. E. Ellenberger, recently reported to erect store, 10th and Broadway, advises project temporarily abandoned. 5-15

D. C., Washington—Woodward & Lothrop have permit to raise roof, make improvements and create additional space in upper part of department store, 10th, 11th, F and G Sts., N. W.; \$70,000.

Ga., Augusta—W. T. Grant Co., H. T. Williams, of Construction & Fixtures Division, 1441 Broadway, New York, recently reported to erect \$50,000 store, advises that they will not have possession of property until 1933. 5-1

Ga., Brunswick—E. P. Farley, Propr., Novelty Shoe Store, 1422 Newcastle St., soon begin work on improvements to store.

La., Lake Charles—A. P. Pujo rebuild store, 705 Ryan St., recently damaged by fire; Jacobs Stores, Inc., Lessee; brick and stucco, oak floors; A. H. Humphrey, Archt., Lewis St.

La., New Orleans—Maple Realty Co. soon ready for bids for 1-story, brick store, Maple and Adams Sts.; Theo. L. Perrier, Archt., Maritime Bldg.

La., New Orleans—Scott Stores, Inc., 430 W. Randolph St., Chicago, remodel store, 1706-10 Dryades St.; bids in.

La., Shreveport—McCrory Stores Corp., 1107 Broadway, New York, erect \$100,000, 2-story, 40x150 ft., brick, steel, stone trim store, 514 Texas St.; W. M. Simpson, Supvg. Archt.; bids in. 5-15

N. C., Cherryville—J. Pliskin and I. J. Londner, of Thomasville and Marion, erect four stores on Main St.; 1-story and basement, brick, art stone and plate glass.

BUILDING CONTRACTS AWARDED

Association and Fraternal

Ark., Malvern—Rockport Lodge No. 58, A. F. & A. M., started work on \$10,000 temple annex after plans by Thompson, Sanders & Ginochio, Archts., Hall Bldg., Little Rock; brick and conc., 2 stories, oak floors, comp. roof; day labor. 4-3

Ky., Louisville—Grand Consistory of Kentucky, A. & A. Scottish Rite of Freemasonry, 212 W. Broadway, let contract to George H. Rommel Co., 958 Logan St., for \$230,000 temple; steel and conc., outside walls brick faced with Bedford stone, 2 stories and basement, 70x170 ft., conc. floors and foundation, comp. roof; furnishings, equipment, etc., \$25,000; Hermann Wischmeyer, Archt., W. S. Arrasmith, Associate, 1201 Heyburn Bldg.; work started. 2-13

Miss., Columbus—Young Men's Christian Assn. let contract at about \$52,000 to Massengale & McIntosh, Heidelberg Bldg., Hattiesburg, for rein. conc., brick and stone trim bldg.; 3 stories and basement, 87x137 ft., slate roof, marble and tile work, steel sash, sheet metal lockers, swimming pool; W. G. Clarkson & Co., Archts., First Natl. Bank Bldg., Fort Worth, Tex. 5-15

Miss., Leland—Ancient Free and Accepted Masons let contract to Lockard & Vaughan, Medidian, for temple; brick, stone trim, rein. conc. and steel frame, 3 stories, 100x45 ft., steel sash, sheet metal, tile and marble work, steam heat; motion picture theater on first

Okl., Oklahoma City—Robert M. Scott, 327 W. 20th St., soon ready for bids for \$10,000, 1-story, brick and conc. store; Tonini & Bramblett, Archts., 416½ W. aMin St.

Tenn., Memphis—Treadwell & Harry, 94 Union St., erect \$23,000, 2-story, 32x122-ft. store, Union Ave. and Watkins St.; J. J. Broadwell, Archt., Struck Bldg.; Willard C. Oppenheim, Lessee.

Tex., La Grange—C. R. Schmidt erect conc. or tile building.

Tex., San Antonio—W. N. Hagy, Archt., Maverick Bldg., erect trade center in town of Del Monte, being developed by Del Monte Development Co., Inc., Thos. T. Taylor, Maverick Bldg.; structure to have 3 street frontages, will be 75x150 ft., house store, service station, restaurant and automotive store.

Tex., San Antonio—J. W. Arnett erect 40x150 ft. store and warehouse in new town of Del Monte, being developed by Del Monte Development Co., Inc., Thos. T. Taylor, Maverick Bldg.

Tex., San Angelo—McCrory Stores Corp., 1107 Broadway, New York, recently reported planning \$100,000 store, advises that they do not contemplate any improvements at this time. 5-22

Theatres

Miss., Greenwood—Greenwood Theatre, J. E. Manning, Mgr., soon start work on remodeling theatre; improvements include rearrangement of front of theatre, new seating arrangements, remodeling of stage and all settings.

Va., Tenn., Bristol—Following contractors estimating on \$200,000, 2-story, 85x230 ft., rein. conc., struc. steel, brick and tile, stone trim theatre, bids May 31 at office McDonald & Co., Engrs.-Archts., Southeastern Trust Bldg., Atlanta, Ga., for Bristol Theatre Corp., W. P. Engel, Sec., 1900 First Ave., Birmingham, Ala.; Grahn Construction Co., Red Rock Bldg.; A. K. Adams Co., 542 Plum St.; J. S. McCauley Co., Bona Allen Bldg., all Atlanta; Kingsolver Construction Co., Bristol, Tenn.; J. J. McDevitt Construction Co., Builders Bldg., Charlotte, N. C.; Smallman Construction Co., 1109 Fifth Ave., S., Birmingham. 5-22

Warehouses

Tex., Dallas—State Highway Dept., Austin, has low bid at \$14,440 from A. J. Rife Construction Co., 1913 N. Howard St., for 1-story, 50x120 ft., brick and steel warehouse for Division No. 18. 5-22

Tex., Fort Worth—Wilson Furniture Co. erect 2-story, 50x100 ft., brick and tile warehouse; built-up roof, conc. and wood floors; L. B. Weinman & Sons, Archts., Texas Natl. Bank Bldg.; bids in.

Tex., La Grange—Jaeger & Jacob, of Carmine (International Harvester dealers), erect building to house La Grange Truck & Implement Co.

floor: Claude H. Lindsley, Archt., Edwards Hotel Bldg., Jackson. 5-8

Bank and Office

Ga., Atlanta—Marlborough Co. (Orr Estate) let contract to Southern Ferro-Concrete Co., 70 Ellis St., N. E., for 11-story W. W. Orr Doctors' Bldg., Peachtree and Pine Sts., site of Doctors' Bldg. recently burned at \$500,000 loss; \$750,000, fireproof, conc. and steel, brick and tile, stone trim, built-up roof; 1 story section for stores; garage in rear; Pringle & Smith, Archts., Norris Bldg., Adams-Cates Co., Grant Bldg., rental agents. Adams-Cates Co., Grant Bldg., rental agents; Contrs., advise will be probably 2 months before sub-contracts are let; plans being revised. 5-15

La., Gretna—Gretna Trust & Savings Bank let contract to Anthony Rouprich, 1007 Jefferson St., McDonoghville, to remodel bldg.; Jones, Roessel & Olschner, Archts., Maison Blanche Bldg., New Orleans. 4-17

Mo., Kansas City—Interstate Heating & Plumbing Co., 1307 Broadway, Kansas City, has mechanical work contract for 10 additional stories to former 7-story Gates Bldg. for Dierks Investment Co.; to be called Dierks Bldg.; elect. work, Edward P. Allison Co., 317 N. 11th St., St. Louis; Holt, Price & Barnes, Archts., Telephone Bldg.; Swenson Construction Co., Contr., Shubert Bldg., both Kansas City; elevator contract not let. 4-3

Mo., Springfield—E. E. McJimsey, 641 South Blvd., remodel 2-story office bldg., 300 block Walnut St.; \$20,000; heating plant, floors, roof, fixtures; Eugene F. Johnson, Contr., 301½ College St.

N. C., Greensboro—Dr. C. W. Banner let contract to J. L. Crouse, American Bank Bldg., to remodel first floor of Banner Industrial Bank Bldg., for Greensboro Morris Plan Industrial Bank, \$27,000; fixtures, equipment, vault; J. Burton Wilder, Archt.

Churches

Mo., Springfield—Church of God, Rev. J. R. Eason, Pastor, erect \$20,000 bldg., Campbell and Calhoun Sts.; frame and stucco, 1 story and basement, 60x100 ft.; Geo. Headlie, Contr., care owner.

Mo., St. Louis—Hope Lutheran Church, Rev. E. L. Roschke, Pastor, let contract to Henry Hinrichs, 6440 Alabama St., for \$75,000 church and Sunday school; brick, 1½ stories and basement, 81x106 ft., marble and tile work, slate roof; Steinmeyer Bros., Archts., Intl. Life Bldg.

Mo., St. Louis—Evangelical Church of the Redeemer, Rev. R. Hellmuth Fritz, Pastor, 6452 S. Kingshighway, let contract to Dickie Construction Co., Louderman Bldg., for additional story; brick and stone, about 70x90 ft.; \$40,000; Preston J. Bradshaw, Archt., 718 Locust St.

City and County

Miss., Laurel—Mayor and City Bd. of Commrs. let contract at \$7100 for agricultural exhibit bldg., and at \$8000 for art exhibit bldg., South Mississippi Fair, to Bradley Bros., Laurel; contract at \$7,119 for grandstand to Bridges & Welsch, Miss. Drug Bldg.; brick and frame; L. W. Duffee, Archt., O'Farrell Bldg.; brick, frame and stucco, 1 story, built-up comp. roof, conc. floors.

S. C., Charleston—City let contract to Charleston Engineering & Contracting Co., 58 Broad St., to refinish, refloor and paint city hall.

Tex., Bonham—Fannin County Bd. of Commrs. let contract to Allen & Dragg, Bonham, to rebuild burned courthouse; use present walls; Wyatt C. Hedrick, Inc., Archt., First Natl. Bank Bldg., Fort Worth; Sparger & Peters, Asso. Archts., Bonham.

Dwellings

Ark., Camden—F. A. Laney let contract to Fraser Construction Co., Springdale, for \$20,000 Spanish type residence; brick veneer and stone, 2 stories, hardwood floors, tile baths, comp. or tile roof; Thos. Harding, Archt., New Donaghey Bldg., Little Rock.

D. C., Washington—Hugh A. Thrift, Union Trust Bldg., erecting 14 brick dwellings, 411-37 Seventeenth St., N. E.; 2 stories, 17.6x32 ft., oak floors, metal roofs; Geo. T. Santmyers, Archt., 1416 I St., N. W.; owner builds.

D. C., Washington—L. E. Breuninger & Sons, Investment Bldg., have permit for 3 brick and stucco dwellings, 7513-7517 Fourteenth St., N. W., 1124 Kalmia Rd., N. W.; 2½ stories; \$24,000; owners build.

Fla., Bradenton—E. E. Bishop, Cleveland, Ohio, and Bradenton, let contract to J. A. Smith, Bradenton, to alter and erect additions to residence, Riverview Drive; add second story, erect two 1-story wings; Colonial type; Franklin O. Adams and J. M. Hamilton, Archts., 509 Twiggs St., Tampa.

Fla., Jacksonville—Bronson E. Lamb, San Jose Blvd., South Jacksonville, erect \$15,000 residence, Rialto Place, San Marco; 10 rooms, hollow tile; W. Kenyon Drake, Archt., Bisbee Bldg.; constr. by owner and W. B. Lamb, Contr. Engr., 11 W. 20th St.

Fla., Miami Beach—W. F. Snyder, Contr., 8938 Harding Ave., erect residence.

Fla., Miami Beach—Arthur Seagren, 903 Water St., S. W., Washington, D. C., erect \$12,000 residence and garage, N. Alton Rd.; conc. block and stucco, 2 stories, tile roof, rein. conc. foundation; Lester Avery, Archt.; C. E. Haley, Contr., both 342 Seybold Bldg., Miami, Fla.

Fla., Miami Beach—Mr. Michaud started work on \$14,500 residence, Prairie Ave. and 34th St.; rein. conc., conc. block and stucco; Upton Construction Co., Contr., 814 Santiago Ave., Coral Gables.

Fla., Miami Beach—P. T. Potts, care J. W. Hunt, Contr., 1130 S. W. 13th Ave., Miami, erect \$75,000 residence, 5000 N. Bay Rd.; rein. conc., conc. block and stucco, 88x114 ft., conc. piles, tile roof; Martin L. Hampton, Archt., 925 Lincoln Rd., Miami Beach.

Fla., Miami Beach—Wm. Sparks, Jackson, Mich., erect addition to residence, 2142 N. Bay Rd.; conc. block, precast conc. rein. piling; Lester Avery, Archt.; C. E. Haley, Contr., both 342 Seybold Bldg., Miami, Fla.

brick, 2 stories and basement, 30x44 ft., hardwood floors, slate roof, tile bath, hot water heat; O. J. Popp, Archt., Arcade Bldg.; work by sub-contract.

Mo., University City, St. Louis—E. J. Pitzer, 7348 Amherst Ave., erect \$10,000 residence, 7448 Amherst; brick, 1½ stories and basement, 30x29 ft., hardwood floors, tile bath, comp. shingle roof, hot water heat; F. G. Avis, Archt., 1021 Big Bend Blvd.; work by sub-contract.

Mo., University City, St. Louis—Ralph Duke, 7025 Dover St., erect \$10,000 residence, 341 Warden Ave.; brick, 1½ stories and basement, 33x30 ft., hardwood floors, tile roof, steam heat; work by sub-contract.

Mo., University City, St. Louis—Jas. B. Nash, 5914A Ridge Ave., started work on \$10,000 residence, 7636 Carswell Ave.; brick, 1½ stories and basement, 27x28 ft., hardwood floors, tile bath and roof, steam heat; work by sub-contract.

N. C., Charlotte—A. M. Webb, 28 Hermite Court, started work on \$18,000 residence, Providence Rd.; Standard Construction Co., Contr., Independent Bldg.

N. C., Charlotte—T. B. Powers, 307 Central Ave., started work on \$13,500 residence, Central Ave. and Plaza; Standard Construction Co., Contr., Independent Bldg.

N. C., Charlotte—Ernest Foard, 304 Westmoreland Ave., erecting \$12,000 residence, Roswell Ave.; Standard Construction Co., Contr., Independent Bldg.

N. C., Charlotte—J. M. Biter, 111 E. Seventh St., started work on \$12,000 brick residence, 12 Ardsley Rd., Myers Park; Standard Construction Co., Contr., Independent Bldg.

Okla., Oklahoma City—Bonnenberger Bros., Inc., 212 N. Harvey St., erect about 8 dwellings, 2300 block W. 23rd St.; also soon start work on \$12,500 dwellings, Edgemere Park Addition, \$18,000 dwelling, Lincoln Terrace and \$10,000 dwelling, Linwood Place Addition; owners builds.

Tex., El Paso—C. V. Robinson erect \$11,000 duplex, 927 Park Rd., Kern Place; 2 stories, 10 rooms; H. T. Ponsford & Sons, Contr., 914 E. Missouri St.

Tex., Fort Worth—Dr. M. J. Bisco, Medical Arts Bldg., erect \$23,000 dwelling, 2329 Bedford Court West, after plans by Stewart Moore, Flatiron Bldg.; brick veneer, 2 stories and basement, 40x57 ft., oak floors, 3 tile baths, slate roof, furnace; owner builds.

Tex., Galveston—W. L. Moody, 3rd, started work on 3 bldgs. at residence, Cedar Lawn: 26x54 ft. conservatory; 33x56 ft. swimming pool bldg., pool to be 20x50 ft.; 2-story structure with showers and dressing rooms on first floor and gardener's quarters above; all connected by glass and steel frame passageways; vitaglass roof in conservatory; steam heat; total \$132,000; Robt. C. Smallwood, Archt., Esperon Bldg.; Northern Construction Co., Contr., Union Natl. Bank Bldg., both Hous-ton.

Tex., Houston—E. E. Dettner, 1408 Michigan St., let contract to River Oaks Corp., River Oaks Bldg., for \$15,000 residence, 2120 Brentwood Drive; brick veneer, 2 stories, 9 rooms, 2 baths.

Tex., Houston—Alpha Corp. erect \$10,000 dwelling and garage, 2303 Wichita St.; brick veneer, 2 stories, 10 rooms; W. J. Goggan, Contr., 1116 Bank St.

Tex., Houston—Harry C. Hanszen, Esperon Bldg., let contract at \$73,630 to Chris J. Miller, 3904 Austin St., for residence, 2945 Lazy Lane; Norman type, hollow tile and brick, 2 stories; John F. Staub, Archt., Second Natl. Bank Bldg.; ground broken.

Tex., Houston—Max Greenbaum, 615 Franklin St., erect \$18,000 residence, 4920 La Branch St.; brick, 2 stories; H. Cohen Lumber & Building Co., Contr., 2310 Leeland St.; work started.

Tex., Fort Worth—L. A. Henderson, 2305 Bedford Court, E., erect \$13,500 brick veneer residence, 2416 Winton Terrace, East.

Tex., San Antonio—Stephen E. Knowlton, care Knowlton Creamery, 1415 W. Summit St., started work on \$15,000 residence, Gramercy Rd.; semi-fireproof, 1½ stories, 40x52 ft., oak, tile and terrazzo floors, rein. conc. foundation, asbestos shingle roof; L. Harrington Co., Archt.-Engr.; F. A. Nunnelly, Contr., both Builders Exchange Bldg. See Want Section—Building Material and Equipment.

W. Va., Huntington—Edwin P. May, care Union Concrete Pipe Co., Union Bank Bldg., let contract to Persun Sheets, 604 Seventh Ave., to rebuild burned residence; \$30,000; G. C. Burroughs, Archt., Union Tr. Bldg., Cincinnati, O. 2-6

Government and State

D. C., Washington—Office of Public Buildings and Public Parks of National Capital will let contract to Bahen & Wright, 916 Rhode Island Ave., N. E., for lodge, 20th and P Sts., N. W. 5-15

Md., Baltimore—Potts & Callahan, Knickerbocker Bldg., Baltimore, have contract to raze old post office and excavate for \$2,950,000 structure; cut stone, Indiana Limestone Co., Bedford, Ind.; granite, Perry Brothers Granite Co., Concord, N. H.; struct. metal work, Lehigh Structural Steel Co., 17 Battery Place, New York; N. P. Severin Co., Contr., 222 W. Adams St., Chicago, Ill. 5-15

Md., Baltimore—Potts & Callahan, Knickerbocker Bldg., Baltimore, have contract to raze old post office and excavate for \$2,950,000 structure; N. P. Severin Co., Contr., 222 W. Adams St., Chicago, Ill. 5-15

Md., Fort George G. Meade—Bickelhaupt, Inc., American Natl. Bank Bldg., Richmond, Va., has contract for water distribution system for officers' and non-commissioned officers' quarters area. 5-1

Hospitals, Sanitariums, Etc.

Ark., North Little Rock, Little Rock—U. S. Veterans Bureau, Arlington Bldg., Washington, D. C., let contract at \$29,500 to Marcus Jorgensen, 1611 N. California Ave., Chicago, Ill., for laundry, including paving and grading, U. S. Veterans Hospital; tile walls, steel truss, wood frame roof, 1 story, 42x116 ft., conc. floors and foundation, slate roof; work not started. See Want Section—Building Material and Equipment. 5-22

La., Shreveport—El Karubah Temple, A. A. O. N. M. S., let contract at \$24,845 to Ashton Glassell Co., Inc., Ricou Ave., for improvements to hospital for crippled children; brick and stucco; wards and machine shop; Edw. F. Neill, Archt., City Natl. Bk. Bldg. 5-22

Miss., Gulfport—Chainlink Fence Co., 5064 Kimball Ave., Chicago, Ill., has contract at \$6296 for wrought iron fence and gates, U. S. Veterans Hospital. 4-3

Tex., Austin—State Bd. of Control let contract at \$29,897 to J. J. Wattinger, Scarbrough Bldg., to remodel and erect third floor addition to Ward C. Austin State Hospital; brick, conc. slab, cement floors, conc. roof, steam heat; W. E. Ketchum, Archt., Pope Bldg. 5-15

Hotels and Apartments

Ark., Hot Springs National Park—Park Hotel Co., James A. Cameron, Pres., Box 476, let contract to R. T. Higgins & Co., 539 Ouachita St., for \$275,000, 7-story, 100x50 ft., rein. conc. and brick, fireproof hotel and apartment in Happy Hollow; 50 hotel rooms and 25 apartments; plumbing, Schrader Plumbing Co., 1016 Central St.; painting, Warren Barnes, 408 Morrison St.; Thompson, Sanders & Ginochio, Archts., Hall Bldg., Little Rock. 4-20

D. C., Washington—Young & Oppenheimer, 914 F St., N. W., erecting six 2-story, 32x36 ft. apartments, 1112-22 Penn St., N. E.; wood floors, slag roof; \$45,000; Geo. T. Samtry, Archt., 1416 1 St., N. W.; owners build. 4-10

Fla., Miami Beach—Rudolph Townsend let contract at \$42,688 to Fred Howland, 1600 N. W. 14th St., for \$75,000, 50-room Anglers Hotel, Washington Ave. and Sixth St.; Henry J. Moloney, Archt., Professional Bldg., both Miami. 4-10

Fla., St. Petersburg—C. C. Clark & Son, reported, have contract for \$60,000, 3-story and basement, 165x50-ft., brick, steel and conc. block hotel; built-up roof, steam heat; Edgar Fardon, Archt., 412 Summer Bldg. 4-10

Md., Baltimore—Buena Vista Apartment Corp., T. W. Harrison, 26 S. Calvert St., start work next week on \$650,000, 10-story and basement, brick, 70-apartment, house, Charles and 33rd Sts., to be known as Chaffonte; White Construction Co., Contr., 26 S. Calvert St.; Frank Russell White, Archt., Garrett Bldg. 4-20

Mo., Clayton, St. Louis—E. A. Simon, 7514 Buckingham St., erect \$30,000, 6-family, brick tenement, 7520 Buckingham St.; rubble foundation, slate roof, oil vapor heat; F. G. Avis, Archt., Big Bend Road, St. Louis, and Clayton; owner builds. 4-20

Mo., Kansas City—Easton Investment Co., E. T. Browning, Dwight Bldg., let contract to H. J. Kusel, 36 S. Dearborn St., Chicago, Ill., for \$800,000, 10-story, brick, 196-apartment hotel, 1315 Linwood Blvd.; T. R. Bishop & Sons, Archts., 35 S. Dearborn St., Chicago. 4-24

Mo., St. Joseph—B. L. Hoffman Construction Co., American Security Bldg., Kansas City, having preliminary plans prepared by A. H. Gentry, March Bldg., Kansas City, for \$200,000, 5-story, brick hotel and theatre, 7th and Roubidoux Sts. 4-24

Mo., St. Louis—Roosevelt Construction Co., 5619 Lavadie St., erect \$25,000, 70x100 ft., brick tenement, 3657-63 Gistine St.; tar and gravel roof, steam heat; R. Shapiro, Archt., Synd. Trust Bldg. 4-24

N. C., Charlotte—Shuford Peeler, Salisbury, erect \$15,000, 2-story, 31x67 ft., brick veneer apartment, 1316 Kenilworth Ave.; foundation completed; comp. roof, oak and tile floors; A. R. Long, Contr., Box 676; Mrs. Leah Roberts, Archt., 1717 Plaza St., both Charlotte. See Want Section—Building Material and Equipment. 5-22

Okla., Oklahoma City—H. J. Clark, 3101 N. McKinley St., erecting 4-story, 22-apartment, 216 W. 12th St.; C. E. Huffman & Sons, Contrs. 4-3

Miscellaneous

D. C., Washington—Following sub-contracts awarded on \$2,000,000, 2 and 3-story, marble Shakespearean Library (structural steel work completed) at E. Capitol St. near Third St., for H. C. Folger, Standard Oil Co., 26 Broadway, New York, for which James Baird Co., Inc., 1800 E. St., N. W., Washington, has general contract; Air conditioning, Carrier Engineering Co., Washington Loan and Trust Bldg.; elevators, Otis Elevator Co., 810 18th St.; excavation, Bright Shepherd Co., 1415 K St.; heating, plumbing and ventilating, Standard Engineering Co., 2129 Eye St.; heat insulation, Southern Asbestos Co., 1117½ 21st St.; linoleum, John R. Livezey, Woodward Bldg.; painting, Edw. W. Minte, 1213 12th St.; plastering, A. W. Lee, 2539 Pennsylvania Ave.; rein. steel (furnish), C. D. Jewell, 1727 K St., N. W.; rein. steel (setting), H. C. Louder, 1337 Ingram St.; roofing and sheet metal, Wolfsteiner Co., 1315 W St.; screens, E. T. Burrows, 2539 Pennsylvania Ave.; stone setting, Norman Campbell, 1319 Geranium St.; tile and terrazzo (Mosaic-slate), U. S. Tile & Marble Co., 2020 Georgia Ave.; waterproofing-asphalt, Weatherproof Cleaning Co., Bond Bldg.; all Washington; book stacks, Art Metal Construction Co., Jamestown, N. Y.; bronze (white metal), Wm. H. Jackson Co., 335 Carroll Ct.; dumbwaiter doors (book lift), Peele Co., Flushing and Stewart Sts., both Brooklyn, N. Y.; elevator doors, Dahlstrom Metallic Door Co., Jamestown, N. Y.; Enfield tile (furnishing), Enfield Pottery & Tile Works, Enfield, Pa.; exterior marble, Georgia Marble Co., Nelson, Ga.; glass and glazing, Hires Turner Glass Co., Rosslyn, Va.; hardware, Supplee-Biddle Hardware Co., 513 Commerce St.; cabinet work, Erik Jansson, 913 E. Girard Ave.; electrical work, W. V. Watts & Co., 151 N. 16th St.; exterior bluestone and flagging, B. Ridgway & Son, 4300 Clarissa St.; interior models and exterior bronze models, Voigt Co., 1743 N. 12th St.; stained glass, D'Ascenzo Studios, 1604 Summer St.; struc. steel, Shoemaker Bridge Co., 4 S. 15th St.; waterproofing-cement coat, Western Waterproofing Co., Liberty Trust Bldg.; wood floors, S. W. Heaton, 1802 Chestnut St., all Philadelphia; interior marble, Hillgartner Marble Co., Sharp and Ostend St.; shingle tile for lecture room, Wallace & Gale, 115 S. Gay St.; vault doors, York Safe & Lock Co., 7 W. Redwood St.; waterproofing-membrane, Wallace & Gale Co., 115 S. Gay St.; all Baltimore; kalamein doors, E. H. Friedrich Co., Holyoke, Mass.; limestone, Indiana Limestone Co., Bloomington, Ind.; wood block flooring, Carter Bloxonend Flooring Co., 419 K. & P. Bldg., Kansas City, Mo.; cork tile flooring, David E. Kennedy, 16 E. 52nd St.; exterior marble models, Anthony DiLorenzo, 238 E. 26th St.; metal windows (steel sash), Henry Hope & Sons, Inc., 101 Park Ave.; orn. iron, La Cour Iron Works, Borden and Van Pelt Aves., Long Island City; waterproofing-integral, Toch Bros., 443 Fourth Ave.; all New York City; Paul F. Cret, Archt., Otis Bldg., Philadelphia. 1-30

Md., Baltimore—Wonderland Park Amusement Co., Wonderland Park, has permit for \$10,000, 1-story, 60x68 ft., frame building, 201 Cherry Hill Road; E. Islip, Archt.; A. August, 122 N. Montford Ave., and Wm. V. Warsaw, Bldrs. 4-24

Md., Baltimore—Western State Teachers College let contract to Moore Bros., Louisville, for \$220,000 health building on College Heights; Bowling Green white stone; gymnasium and classrooms suitable for physical education and training. 4-24

La., Bastrop—Morehouse Parish School Bd. let contract at \$109,900 to McBride Construc-

Mo., Bagnell—Union Electric Light & Power Co., H. L. Egan, Pres., 12th and Locust Sts., St. Louis, let contract to Stone & Webster, 49 Federal St., Boston, Mass., and 540 Paul Brown Bldg., St. Louis, for \$83,000 club (log cabin); 2 stories, frame; LaBeaume & Klein, Archts., American Trust Bldg., St. Louis. 4-24

Mo., St. Louis—St. Louis Women's Club, Mrs. Pearl Merrill, Sec., 4600 Lindell Blvd., has permit for 2-story, brick addition and alterations to clubhouse; \$40,000, comp. roof, steam heat; Dickie Construction Co., Bldr., Louderman Bldg.; Wm. B. Ittner, Inc., Archt., Bd. of Education Bldg. 4-24

Tex., Houston—Bd. of Trustees, Pauline Sterne Wolfe Memorial Home, let contract to J. A. Roberts, Bankers Mortgage Bldg., for administration building, children's cottage, widows cottage; \$200,000; 2 stories, brick; plumbing, Dixie Heating & Ventilating Co., 109 Fannin St.; electrical, J. S. Copeland Electric Co., 1307 Bell St.; Joseph Finger, Archt., Democratic Bldg. 4-17

Va., Williamsburg—Rockefeller Restoration Foundation, Dr. W. A. R. Goodwin, Local Representative, soon start work on rebuilding Bassett Hall damaged by fire; Todd & Brown, Inc., Contrs., Robert Trimble, Jr., Mgr., in charge of all restoration work; Perry, Shaw & Hepburn, Archts., 141 Milk St., Boston, Mass. 4-17

Railway Stations, Sheds, Etc.

Ark., Hoxie—St. Louis San Francisco R. R., care J. M. Dunham, Supt. for Railway Express Co., let contract to T. G. Raines Construction Co., Fort Madison, Iowa, for \$18,000, brick and stone express building. 4-24

Tex., Fort Worth—Following sub-contracts let on 13-story, 210x60 ft., brick, rein. conc. passenger station and office building for Texas & Pacific Ry. Co., for which P. O. B. Montgomery, Construction Industries Bldg., Dallas, has general contract; Campbell metal windows, Gilbert Manufacturing Co., Marvin Bldg.; excavation, Vilbig Bros., Inc., Paris; struc. steel erection, Venable Moore, 4218 Hall St., all Dallas; Indiana oolitic limestone, Indiana Limestone Co., Bedford, Ind.; struc. steel, Petroleum Iron Works, Petroleum Bldg., Houston; rein. steel, Sheffield Steel Corp., Sheffield, Kansas City Mo.; Wyatt C. Hedrick Jr., Archt., First Natl. Bank Bldg., Fort Worth. 5-1

W. Va., White Sulphur Springs—Chesapeake & Ohio Ry. Co., C. W. Johns, Ch. Engr., Richmond, Va., let contract to Ward & Ward, Peoples Bank Bldg., Charleston, for 1-story, 25x100 ft., brick passenger station and car parking tracks; \$75,000; conc. floors, slate roof; work started; all material included in contract. 5-15

Schools

Ala., Birmingham—Howard College, O. S. Causey Athletic Dir., let contract to L. C. Ellison & Co., Ensley, for \$35,000, 1-story and basement, 75x126 ft., brick, stone trim gymnasium; E. B. Van Keuren, Archt., Comer Bldg. 4-10

Ala., University—University of Alabama, Shaler Houser, Treas., let contract at \$35,000 to Skinner Construction Co., Tuscaloosa, for 2-story, 40x40 ft., brick, struc. steel, stone trim Chemistry Bldg. for Metallurgy Dept.; Warren, Knight & Davis, Archts., Protective Life Bldg., Birmingham. 5-8

Ark., Russellville—Pope County School Bd. let contract at \$45,025 to E. V. Bard Construction Co., Fayetteville, for 2-story, 61x100 ft., brick, 17-classroom junior high school; John P. Almand, Archt., Boyle Bldg., Little Rock. 5-8

Ark., Salem—Salem Consolidated School Dist. Trustees let contract to Haney Hall, Ash Flat, for \$15,000, brick, cobblestone trim, 8-classroom and auditorium school. 2-20

Ala., Tuscumbia—School Bd., John D. Rather, Jr., Chmn., let contract at \$37,000 to Stone & Devaney Co., Russellville, for 2-story, brick, 12-classroom and auditorium grammar school; Sam C. Molloy, Archt., Birmingham. 5-22

Ga., Lanier—Black Creek Consolidated School Dist. Trustees let contract to Lowe & Co., Savannah, for brick school. 4-24

Ky., Bowling Green—Western State Teachers College let contract to Moore Bros., Louisville, for \$220,000 health building on College Heights; Bowling Green white stone; gymnasium and classrooms suitable for physical education and training. 4-24

La., Bastrop—Morehouse Parish School Bd. let contract at \$109,900 to McBride Construc-

tion Co. for 2-story, rein. conc., brick and stone trim addition to Bastrop High School; plumbing, \$33,000. W. J. Riley Plumbing Co., Monroe; J. W. Smith & Associates, Archts., Ouachita Natl. Bank Bldg., Monroe. 5-8

La., Braithwaite — Plaquemine Parish School Bd., Pointe-a-la-Hache, let contract at \$11,218 to Denis & Handy for alterations and additions to school; Wm. R. Burk, Archt., Balter Bldg., New Orleans. 5-15

La., Franklin — Washington Parish School Bd. let contract to Albert Seal, Bogalusa, to remodel elementary school; Herman J. Duncan, Archt., 120 Murray St., Alexandria. 5-1

La., Shreveport — Caddo Parish School Bd., E. Weldon Jones, Supt., let contract at \$72,221 to F. C. McClanahan, Homer, for 2-story, brick, 8-classroom and auditorium addition to Barrett Street School; Edw. F. Neild, Archt., City Bank Bldg. 5-8

Md., Baltimore — University of Maryland remodel old dental building unit for laboratories; work includes new stairway, installation elevator shaft, etc.; \$60,000; J. S. Downing, Bldr., 2609 Greenmount Ave.; Smith & May, Archts., Calvert Bldg. 5-15

Miss., Amory — Bd. of Education let contract at \$11,710 to Leake & Goodlett, Tupelo, for negro school; let contract at \$10,612 to Chastagne Construction Co., Jackson, for gymnasium and home science department of Amory High School. 5-15

Miss., Brandon — Brandon Consolidated School Dist., E. A. Jackson, Sec., let contract at \$11,550 to Currie & Corley, Raleigh, for 4-classroom and basement addition and alterations to school; Hull & Malvaney, Archts., Merchants Bank Bldg., Jackson. 5-15

Miss., Harrisville — Simpson County Bd. of Education, Monroe Ball, Supt., Mendenhall, let contract at \$9220 to B. E. Berry, E. A. Ashley and R. B. Walker, Pinoia, for 1-story, brick school. 5-3

Mo., Desloge — Bd. of Education, School Dist. No. 29, Dr. L. M. Reaves, Pres., let contract to C. D. Richardson, Flat River, for \$65,000, 2-story, 132x80-ft. brick and rein. conc., fireproof gymnasium and auditorium; also let contract to G. C. McDaniel, Farmington, for improvements to 3-story and basement, brick high school; Bonsack & Pearce, Archts., 411 Olive St., St. Louis. 5-10

Mo., Jennings — Bd. of Education, O. A. See, Supt., let contract to Theo. Henry Ratz, 917a Pine St., St. Louis, for 2-story, 20x50 ft., brick high school addition; excavation started; Tiletex doors, built-up roof; Hoefer, Baum & Froese, Archts., 3605 Laclede Ave., St. Louis. 5-15

Mo., St. Louis — Riverview Gardens Public School Dist., Mrs. Etta M. Schuchardt, Sec., Baden Station, R. R. No. 14, Box 990, let contract at \$30,399 to Higbee Bros. Construction Co., 4161 Delmar Blvd., for 2-story and basement; 79x36 ft., brick and rein. conc., fireproof addition to Marvin School St. Charles and Woodson Road; Wm. B. Itner Inc., Bd. of Education Bldg. 5-22

Mo., St. Louis — Church of Resurrection, 2880 Merame St., has permit for \$90,000, 2- and 3-story, 103x57 ft., brick school; comp. roof, steam heat; H. P. Hess, Archt.; J. P. Fendler, Contr., 5616 Lisette St. 5-15

N. C., High Point — Bd. of School Comms., T. Wingate Andrews, Supt., let contract at \$71,790 to Wilson & Keziah, Centennial St., for 2-story, 80x350 ft., brick and hollow tile elementary school, Spring and Brentwood Aves.; comp. roof, stone trim, terrazzo and wood floors; Eccles Everhart, Archt., Commercial Bank Bldg. See Want Section — Building Material and Equipment. 5-22

Okla., Norman — Sigma Mu Sigma, University of Oklahoma, let contract to McAlester Construction Co., McAlester, for \$50,000, 3-story, brick, tile and stucco fraternity house. 5-22

Okla., Tulsa — University of Oklahoma, Dr. John D. Flinlayson, Chancellor, let contract to Manhattan Construction Co., Court Arcade Bldg., Tulsa, and Manhattan Bldg., Muskogee, for \$275,000; rein. conc. stadium; seat 14,500 people; Smith & Senter, Archts., Philhower Bldg. 12-5

S. C., Anderson — Bd. of Trustees, School Dist. No. 17, let contract at \$10,670 to Townsend Lumber Co., N. Towers St., for brick school on Lee St. 5-15

Tenn., Alton Park, Chattanooga — Hamilton County Bd. of Education, Mrs. Harry Lacey, Chmn., let contract at \$70,853 to W. W. Jones, James Bldg., for 1-story and basement, brick and tile, 18-classroom and auditorium elementary school; heating, \$8400, Sam

Raider, 10 E. 11th St.; plumbing, Chattanooga Heating & Plumbing Co., 713 Cherry St.; R. Maxwell James, Provident Bldg., and William Crutchfield, First Natl. Bank Bldg., Asso. Archts. 5-15

Tenn., Chattanooga — Hamilton County Bd. of Education, Fred A. Frawley, Sec., let contract to R. L. Gadd for auditorium and 4 classroom addition to White Oak school; brick, stone trim, comp. roof; Gordon L. Smith, Archt., Volunteer Life Bldg. 5-15

Tenn., Johnson City — Bd. of Education started work on \$55,661, 3-story and basement, 36x107-ft. brick and conc. addition to high school; maple and conc. floors. Johns-Manville roof; Marshall Construction Co., Contr.; Colle & Cardwell, Archts.; W. O. Dyer, Engr. 5-22

Tenn., Martin — University of Tennessee, James J. Walker, South College, Knoxville, let contract at \$100,600 to Bell Bros., Murfreesboro, for Physical Education building and Industrial Arts building for University of Tennessee Junior College; plumbing, \$27,505. A. Burchard, Martin; electric, \$5935. Wm. Slater Electric Co., 134 S. Second St., Memphis; Barber & McMurry, Archts., General Bldg., Knoxville. 4-24

Tex., Amarillo — Bd. of Education let contract to Clem Anderson, 1010 W. Sixth St., for \$160,000, brick and cut stone, 16-classroom West Amarillo Jr. High School; J. Roy Smith, Archt., Blackburn Bldg. 4-17

Tex., Fairfield — Fairfield Ind. School Dist., P. D. Browne, Supt. of Schools, at \$26,311, contract to A. W. Fowlkes, Temple, for 1-story, 54x120 ft. brick and rein. conc. addition to school; comp. roof, wood and cement floors; Page Bros., Archts., Littlefield Bldg., Austin; Gardner & Howe, Engrs., Kirby Bldg., Dallas. 5-22

Tex., Grand Saline — Grand Saline Ind. School Dist. let contract at \$36,000 to G. E. Shirley, 3007 Swiss St., Dallas, for 17-classroom school. 5-22

Tex., Houston — St. Anne's Parish Church, Rev. J. J. Glavin, Pastor, let contract at \$42,218 to Standard Construction Co., Esperon Bldg., for 2-story, 191x33 ft., rein. conc., hollow tile, brick and stucco school. Westheimer and Shepherd Sts.; Maurice J. Sullivan, Archt., Second Natl. Bank Bldg. 5-15

Tex., San Antonio — Bd. of Education, Dr. J. A. McIntosh, Pres., let contract at \$11,964 to Zeno Koltes 324 E. Park St., for 2-story, 2-classroom, brick, tile and rein. conc. addition and improvements to Hawthorne Jr. High School; Olin Boese, Archt., Builders Exchange Bldg.; Beretta-Stiles Co., Inc., Engrs., Natl. Bank of Commerce Bldg.; Phelps & Dewees, School Archts., Gunter Bldg. 5-8

Va., Newport News — St. Vincent's R. C. Church, 33rd St. and Huntington Ave., let contract at \$143,679 to J. W. Davis, Law Bldg., for 2-story, 142x200 ft., brick, conc. and steel, fireproof parochial school, 34th St. and Virginia Ave.; equipment \$15,000; built-up paper roof, comp. roof; 11 classrooms, playroom, cafeteria, auditorium, lounge room, gymnasium and quarters for Catholic Sisters; A. Bryon Williams, Archt., Engrs., Natl. Bank of Commerce Bldg.; Phelps & Dewees, School Archts., Gunter Bldg. 5-8

Ala., Birmingham — Munger Realty Co., Jackson Bldg., erect 1-story, 19x80-ft. brick store addition, Broad St. and Cotton Ave.; built-up roof, conc. floors; D. T. Underwood, Contr., Pioneer Bldg.; Miller & Martin, Archts., Title Guarantee Bldg. 5-22

Fla., Miami Beach — Geo. E. Homan, 658 Collins Ave., started work on \$12,000, 2-story, rein. conc., conc. block and stucco store and apartment. 5-22

Ky., Cynthiana — Dennis Williams excavating for \$20,000, 2-story, 47x71 ft., brick store and office building, Pike and Walnut Sts.; hardwood floors, Johns-Manville roof; O. P. Ranand and D. Clark, Contrs.; J. R. Stevens Clark Co., Archt. 5-22

La., St. Joseph — J. W. Stone erecting brick store and brick filling station on site of building recently destroyed by fire; Oscar Levy to occupy store. 5-22

Md., Baltimore — Vilma Amusement Co., 3403 Belair Road, let contract to E. Eyring & Sons Co., 808 S. Conkling St., for \$30,000, 1-story brick building, Belair Road and Mayfield Ave., containing quarters for bank and store. 5-22

Miss., Hattiesburg — S. H. Kress & Co., 114 Fifth Ave., New York, let contract to J. V. & R. T. Burkes, Inc., Am. Bank Bldg., New

Orleans, for 2- and 3-story store; brick and terra cotta with marble and granite base; 27,000 sq. ft. floor space. 5-15

Mo., St. Louis — Sonia Realty Co. let contract to Wimmer Contracting Co., Victoria Bldg., for improvements to store, Seventh and Olive Sts., to be leased to J. S. Wolff Clothing Co., Fourth and Washington Aves.; Klipstein & Rathmann, Archts., 316 N. 8th St. 5-15

Mo., Clayton, St. Louis — Thos. Kotka, 3919 Dunnica St., erect \$16,000, 2-story, 37x50 ft., brick store, 6403-05 Clayton Road; stone foundation, slate roof, hot water heat; Hy Beitz, Bldr., 2668 Nebraska St.; Hy Schaumberg, Archt., 3631 Connecticut St. 5-22

Mo., Kansas City — Jewell Development Co., W. R. Jewell, Chambers Bldg., erecting \$60,000, 2-story, 50x150 ft., conc., steel, brick and terra cotta building, 1201-03 E. 31st St., for shops and offices; tar and gravel roof, conc. floors; Chas. Williams, Archt., 4301 Main St.; Sam Seiler, Engr., Finance Bldg.; owner builds. 5-22

Tenn., Chattanooga — John O. Fowler Furniture Co., 7th and Broad Sts., let contract to John Parks, 315 Oak St., for improvements to store; \$40,000; T. G. Street, Archt., 212 S. Crest Road. 5-22

Tenn., Nashville — Following sub-contracts awarded on \$100,000, 6-story, 50x140 ft., brick and rein. conc., fireproof store under construction by H. G. Hill Realty Co., 500 Second Ave., North, to be leased to Sterchi Brothers Stores, Inc.: Plumbing, heating ventilating, J. M. Gallagher, 119 Fifth Ave., N.; conc. aggregates, T. L. Herbert & Sons; brick and tile, W. G. Bush & Co., both 174 Third Ave., N.; lumber and finished wood flooring, Norvell & Wallace, 1601 Broad; rein. steel, Wilson-Weesner-Wilkinson Co., Fatherland St.; struc. steel, Nashville Bridge Co., Foot of Shelby Ave., all Nashville; electrical work, Warner Service Co., 102 W. Church Ave., Knoxville; cast stone, White Stone Co., Inc., 1468 McLemore St., Memphis; misc. iron, Price-Evans Foundry Corp., Anderson Ave., Chattanooga; steel sash, Wm. Bayley Co., Springfield, Ohio; V. L. Nicholson Co., Contr., Box 661, Knoxville; Marr & Holman, Archts., Stahlman Bldg., Nashville. 4-17

Tex., San Antonio — Anthony & Santikos, 406 E. Houston St., erect 1-story, brick, steel and conc. store, 406-10 E. Houston St.; Ed. Oefflinger, Contr., 710 Avenue A; Herff & Jones, Archts., San Antonio Loan & Trust Co.; Beretta-Stiles Co., Inc., Engrs., Natl. Bank of Commerce Bldg.; Alterman Haberdashery, Lessee. 5-22

Tex., Temple — Roddy Brothers rebuild store recently damaged by fire; A. W. Fowlkes, Contr. 5-22

Warehouses

Ky., Horse Cave — S. L. Duncan and Malcum Thompson have permit for loose leaf tobacco warehouse and sales floor building; brick, cement, lumber, trucks for floor, scales and pricing machinery. 5-22

La., Alexander — Hill Harris Co., Inc., Thorn St., let contract at \$12,882 to Edgar Loharde, for third unit of 2-story, rein. conc., brick and steel warehouse, Washington and 13th Sts.; 18,000 ft. floor space, built-up roof; E. Leo Ball, Archt., Haas Bldg. 5-22

Mo., St. Louis — Liggett & Myers Tobacco Co., 4241 Folsom St., has permit for \$30,000, 1-story, 108x257 ft., brick warehouse, 4000 Park St.; tar and gravel roof; James Black Masonry & Contracting Co., Bldr., Louderman Bldg.; J. Wunderlich, Archt., 4930 Tholozan St. 5-22

Mo., St. Louis — Warson Petroleum Co., Paul Brown Bldg., has permit for \$40,000, 2-story, 100x235 ft., brick warehouse and office, 1301 Mackind St.; The Austin Co., Archt., Bldr., 510 N. Dearborn St., Chicago, Ill. 5-22

Mo., St. Joseph — Associated Grocers, J. D. Dawson, Pres., 214 S. Third St., let contract to Lehr Construction Co., 1712 Frederick St., for \$30,000, 1-story, 110x140 ft., brick warehouse and office, 4th and Patee Sts. 5-22

Bridges. — An attractive calendar for the months of the current year, beginning with April, has been issued by the Atlantic Bridge Co., Greensboro, N. C., engineers, contractors and erectors of steel and concrete highway bridges.

WANT SECTION

THE CLASSIFICATIONS IN THIS SECTION ARE:

Machinery and Supplies

Under this heading are reported requests for data, prices and literature and information on machinery, supplies and miscellaneous materials of a wide variety.

Items in this department are published without charge and these columns are open for the publication of wants of all kinds relating to construction work, machinery, materials and supplies.

Building Materials and Equipment

This division comprises all classes and kinds of materials and equipment used in building and construction projects of every kind.

Bids Asked

Includes bids asked by U. S. Government, States, districts, municipalities, firms and individuals for machinery, materials, supplies and construction work.

Machinery and Supplies

Blue Printing, Washing and Drying Machine.—Ingalls Iron Works Co., Birmingham, Ala.—Wants prices and data on used, 41-in. No. 20 Model, Peerless Pease or equal blue printing, washing and drying machine.

Engine Generator Set.—W. P. Christian, Inc., 1703 W. Lee St., Greensboro, N. C.—Wants prices and data on 300-kw., 250-volt, direct current generator, direct connected to steam engine of any good make, with switch-board.

Fruit Crystallizing Machinery.—A. B. Wade, Box 56, Coconut Grove Sta., Miami, Fla.—Wants prices and data from manufacturers of machinery for crystallizing fruits; also wants facts about crystallizing process.

Hoists.—Syndor Pump & Well Co., 1310 E. Main St., Richmond, Va.—Want prices and data on gasoline driven hoists, light sizes.

Motor (Slip Ring).—Randle Machinery Co., 1723-28 Powers St. (Cumminsville), Cincinnati, Ohio.—Wants prices and data on used slip ring motor, 75 h. p., 3 phase, 60 cycle, 220 volt, 720 r. p. m., complete with base, pulley 16½ x 16 in., face and drum controller with resistance for starting duty, General Electric preferred.

Woodworking Machine.—H. H. Hopson, Clarksville, Miss.—Wants prices and data on combination saw, lathe and planer, and possibly other attachments.

Acme Steel Engineering Co., 917-929 S. Howard St., Baltimore, Md.—Wants prices and data on following:

(1) **Compressor**—gasoline power, 125 cu. ft., 110 lb.
(2) **Welder (Electric)**—gasoline power, 250 ampere
(3) **Welders (Electric)**—2 300 ampere.

Carson & Smith, 804 Oakland Ave., Greensboro, N. C.—Want prices and data on following:

(1) **Dowel Machine**—for turning locust tree nails or ship pins 14 to 36 in. long.
(2) **Insulator Pin Machines**

(3) **Pin and Bracket, Threading and Boring Machine**—combined, for boring brackets

(4) **Ship Supplies (Wooden)**.

Sauls Lumber Co., Wakulla, Fla.—Wants prices and data on following:

(1) **Boiler**—100 h. p.
(2) **Engine (Steam)**—80 to 100 h.p.
(3) **Fan**—62 in., slow speed, with dust collector and blowpipe
(4) **Line Shaft and Pulleys**
(5) **Planing Machine**—Yates A4, with top and bottom profile, size 6x15
(6) **Trimmer**—1 man, 2 saws.

Miscellaneous

Baseball Bats.—Jackson Mill Co., Jacksonville, Fla.—Wants prices and data from manufacturers of baseball bats.

Motion Picture Machine.—C. M. Emerich, Woolmarket, Miss., R. D. from Biloxi—Wants prices on motion picture machine for \$25,000 school.

Paints and Cements (Roof).—Texas Tinner Supply Co., 814 McCall St., Houston, Tex.—Wants prices and data on all kinds of roof paints and roof cements in standard packages.

Push Cart.—Lloyd T. Clark, Southern Pine, N. C.—Wants prices and data on barrel type push cart with pan for sweeping trash and dumping it into barrel.

Bensusan & Sides, B. P. No. 139, Saloniki, Greece—Want to represent firm in position to export wheat on large scale.

Building Material and Equipment

C. H. Emerich, Woolmarket, Miss., R. D. from Biloxi, wants prices on following for \$25,000 school:

Auditorium Stage Equipment

Roofing—built-up.
Seating—desks and seats for classrooms, auditorium

Eccles Everhart, Archt., Commercial Bank Bldg., High Point, N. C., wants prices on following for \$90,000 school:

Brass and Bronze Work

Cast Stone

Flooring—hardwood, tile, composition

Roofing—built-up, slate

Steel Sash and Trim

Tile—hollow

Ventilators.

Julian S. Starr, Archt., Box 94, Rock Hill, S. C., wants prices on following for 2-story, 100x100 ft. school, Kershaw, S. C.:

Flooring—gum

Metal Ceilings

Plaster Board

Roofing—asphalt shingle, built-up

Steel Sash.

J. S. Shaw, Contr., Georgia Savings Bank Bldg., Atlanta, Ga., wants prices on following for \$13,000 store:

Limestone

Roofing—built-up

Steel Sash and Trim

Tile—hollow.

L. Harrington Co., Archt.-Engr., 804 Builders Exch. Bldg., San Antonio, Tex., wants prices on following for \$15,000 dwelling:

Cast Stone

Flooring—hardwood, terrazzo, tile

Roofing—asbestos shingle.

Marcus Jorgensen, Contr., 1611 N. California Ave., Chicago, Ill., wants prices on following for laundry bldg., North Little Rock:

Cast Stone

Electrical Work

Heating Plant

Plumbing Work

Roofing (hip)—slate

Steel Sash and Trim

Structural Steel

Tile—hollow.

Robt. H. Goodman, Archt., Bank of Baton Rouge Bldg., Baton Rouge, La., wants prices on following for \$12,000 dwelling:

Cast Stone

Electric Refrigerators

Flooring—hardwood, linoleum, tile

Roofing—tile

Ventilators.

Shuford Peeler, Salisbury, N. C., wants prices on following for \$15,000 apartment:

Electric Refrigerators

Flooring—hardwood, tile

Plaster Board

Tile—gypsum.

Bids Asked

Ambulances (Motor).—Marine Corps, Q. M. Dept., Washington, D. C.—Bids June 4 for 8 motor ambulances, delivery Philadelphia, Pa.

Asphalt.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids June 3 for 1250 gal. asphalt, delivery Quantico, Va.

Automobile.—U. S. Coast Guard Headquarters, Washington, D. C.—Bids June 5 for radio test car.

Automobiles.—Comms., Dist. of Columbia, Washington, D. C.—Bid June 10 for automobiles.

Babbitt Metal.—U. S. Engr. Office, Galveston, Tex.—Bids June 2 for babbitt metal.

Belt.—U. S. Engr. Office, Memphis, Tenn.—Bids June 2 for 500 ft. rubber conveyor belt, 24 in. wide.

Boiler Tubes.—U. S. Engr. Office, Huntington, W. Va.—Bids June 2 for boiler tubes, genuine iron, No. 10 gauge.

Boiler Tubes.—U. S. Engr. Office, Memphis, Tenn.—Bids June 3 for 500 seamless steel boiler tubes.

Boiler (Heating).—Treasury Dept., Office of Supvg. Archt., Washington, D. C.—Bids June 16 for removing old heating boiler and installing new boiler in U. S. Post office, Gainesville, Fla.; drawings and speci-

fications with Custodian, U. S. post office, Gainesville, Fla., or Office of Jas. A. Wetmore, Acting Supvg. Archt., Washington, D. C.

Boiler.—U. S. Engr. Office, Kansas City, Mo.—Bids June 28 for steam boiler.

Bolts.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids June 3 for 4200 machine and carriage bolts, delivery Quantico, Va.

Burlap.—Office of Chief of Engineers, Washington, D. C.—Bids June 3 for 190,000 burlap and sand bags and 8500 lin. yd. jute burlap.

Bridge.—Louisville, Ky. See Construction News—Bridges, Culverts, Viaducts.

Bridges.—State of Tennessee—Bids for 7 bridges. See Construction News—Roads, Streets, Paving.

Bridges.—State of North Carolina. Bids for 2 bridges. See Construction News—Roads, Streets, Paving.

Bridges.—State of Missouri—Bids for 41 bridges. See Construction News—Roads, Streets, Paving.

Bridges.—Graham, Tex. Bids for 5 bridges. See Construction News—Bridges, Culverts, Viaducts.

Bridge.—State of Maryland. See Construction News—Roads, Streets, Paving.

Casting.—U. S. Engr. Office, Jacksonville, Fla.—Bids June 14 for manganese steel cutter casting.

Clips.—U. S. Engr. Office, foot of Prytania St., New Orleans, La.—Bids June 3 for 1,500,000 wire rope clips.

Clothing.—Quartermaster Supply Office, Fort Sam Houston, San Antonio, Tex.—Bids June 9 for civilian clothing as required during fiscal year 1931.

Conveyor, etc.—Pur. Agt., Government Printing Office, Washington, D. C.—Bids June 9 for installing conveyor and pneumatic tube system.

Coal.—U. S. Engr. Office, Vicksburg, Miss.—Bids June 4 for 14,100 tons bituminous coal.

Crankshaft.—U. S. Engr. Office, 4400 Dauphine St., New Orleans, La.—Bids June 3 for forged steel crankshaft.

Derrick.—Comms., Dist. of Columbia, Washington, D. C.—Bid June 11 for derrick.

Electric Welder.—Comms., Dist. of Columbia, Washington, D. C.—Bid June 9 for complete electric welding machine.

Engines (Airplane).—Div. of Supplies, Dept. of Commerce, Washington, D. C.—Bids June 3 for 2 airplane engines.

Engines (Diesel).—U. S. Coast Guard Headquarters, Washington, D. C.—Bids June 3 for 3 Diesel engines, approx. 12 h. p., for driving 8-kw. generators.

Furniture and Equipment (Courthouse).—W. W. Downing, Chancery Clk., Hinds County Bd. of Supervisors, Jackson, Miss.—Bids June 10 for furniture and equipment for new Hinds County Courthouse, including special court room furniture, steel equipment, office furniture, laundry equipment, kitchen equipment, household and toilet equipment, etc.

Fans (Electric).—Quartermaster Supply Officer, Washington, D. C.—Bids June 6 for 814 electric fans.

Fish Hatchery.—Kentucky Game and Fish Coms., Frankfort, Ky.—Bids June 12 for fish hatchery, Glen Springs, near Vanceburg, Ky. See Construction News Columns—Miscellaneous Construction.

Gravel.—Many, La. See Construction News—Roads, Streets, Paving.

Greenhouse.—Dept. of Agriculture, H. B. Weaver, Acting Chief, Div. of Purchase, Sales and Traffic, Washington, D. C.—Bids June 6 for furnishing all materials for superstructure and alternately, including erecting greenhouse at Houma, La.

Hardware.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids June 2 for hardware, delivery Quantico, Va.

Launch.—U. S. Engr. Office, Vicksburg, Miss.—June 3 for 28-30-ft. gasoline launch.

Linoleum.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids June 2 for 200 sq. yd. linoleum, delivery Quantico, Va.

Miscellaneous.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids June 3 for Portland cement, transmitting and receiving radio equipment, portable crane, to navy yard, Washington.

Miscellaneous Machinery, Tools, etc.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids June 10 for files and rasps, taps, dies, tap wrenches and dies, motor driven plate bending roll, motor driven press brake machine; bids June 17 for woodworking lathe and motor driven planer, calipers, dividers, gauges, planes and squares, prickers and shovels.

Miscellaneous.—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids June 28 for following, Sch. 2561:

Black pipe, chain links, bolts, nuts, washers, screw anchors, screw eyes, staples, tacks, sash centers and fasteners, drawer pulls, carbide lamps, oil stones, etc.

Miscellaneous.—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids June 6 for following, Sch. 2562:

Metal roofing, marine ranges, hinges, hasps, door knobs, gate hooks-and-eyes, transom catches, liquid door checks, truck casters, gongs, file handles, brushes, etc.

Miscellaneous Machinery, Tools, etc.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C.—Bids June 10 for motor driven toolmakers precision lathe; bids June 17 for clamps, emerywheel and glass cutters, tool holders, punches, sockets, spikes, belt driven outside open type molder, augers, wood boring and screw driver bits, chisels, knives, scribes and spatulas scrapers and motor driven double surface.

Miscellaneous.—Panama Canal, Office of Gen. Pur. Officer, Washington, D. C.—Bids June 10 for following, Sch. No. 2564:

Sodium nitrate dynamite, electric detonators, blasting caps and safety fuse.

Paving.—Bristol, Va. See Construction News—Roads, Streets, Paving.

Paving.—Beaumont, Tex. See Construction News—Roads, Streets, Paving.

Paving.—Lake Charles, La. See Construction News—Roads, Streets, Paving.

Plumbing Supplies.—U. S. Engr. Office, Galveston, Tex.—Bids June 2 for globe valves, angle valves, check valves, bushings, elbows, pipe caps, nipples, plugs, etc.

Paints.—Quartermaster Supply Office, Fort Sam Houston, San Antonio, Tex.—Bids June 5 for 1000 lb. aluminum powder and 500 gal. liquid aluminum.

Pipe (Terra Cotta).—Marine Corps, Q. M. Dept., Washington, D. C.—Bids June 4 for 24 terra cotta sewer elbows and 1400 ft. terra cotta sewer pipe.

Plumbing Supplies.—Marine Corps, Q. M. Dept., Washington, D. C.—Bids June 4 for plumbing supplies, delivery Quantico, Va.

Pumps.—See Sewage Pump Station.

Road.—Many, La. See Construction News—Roads, Streets, Paving.

Roads.—Waxahachie, Tex. Bids for 2 roads. See Construction News—Roads, Streets, Paving.

Roads.—State of Maryland. Bids for 7 roads. See Construction News—Roads, Streets, Paving.

Roads.—State of Missouri. Bids for 56 roads. See Construction News—Roads, Streets, Paving.

Roads.—Columbia, La. Bids for 2 roads. See Construction News—Roads, Streets, Paving.

Roads.—State of North Carolina. Bids for 9 roads. See Construction News—Roads, Streets, Paving.

Roads.—State of Tennessee. Bids for 9 roads. See Construction News—Roads, Streets, Paving.

Rope (Wire).—U. S. Engr. Office, Mobile, Ala.—Bids June 3 for wire rope, as required during period July 1 to Dec. 31, 1930.

Sewer Construction.—Sanitary and Drainage Comsn., 39 Broad St., Charleston, S. C.—Bids June 5 for construction storm drain with manholes and catch basins on Belvedere Rd. and Huguenin Ave.

Sewer Construction.—Sewer Improvement Dist. No. 1, Augusta, Ark. Bids June 2 at office of Bank of Augusta and Trust Co., for construction of laterals and pumping station; Lund Engineering Co., Home Life Bldg., Little Rock, Engrs.

Sidewalk.—Charleston, S. C. See Construction News—Roads, Streets, Paving.

Street.—Baltimore, Md. See Construction News—Roads, Streets, Paving.

Street.—Jefferson City, Mo. See Construction News—Roads, Streets, Paving.

Tractor.—Supt., St. Elizabeth's Hospital,

Washington, D. C.—Bids June 2 for farm tractor.

Work Benches.—Comms., Dist. of Columbia, Washington, D. C.—Bid June 6 for 66 work benches and 2 glue and stain benches for public schools.

Water Piping.—Treasury Dept., Office of Supvg. Archt., Washington, D. C.—Bids June 18 for installing new water piping in U. S. custom house, a. s. and court house, Wilmington, N. C.; drawings and specifications with Custodian, on site, or Office of Jas. A. Wetmore, Acting Supvg. Archt., Washington, D. C.

INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers, whether they are advertisers, or subscribers, or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

Elect New Officials.

W. J. Savage & Co., Knoxville, Tenn., manufacturers of mill and mine machinery, including flour mill equipment, chemical feeders, and metal cutters, announce that J. H. Murrian has become president and J. A. Murrian, vice-president and general manager of the company.

Engineers to Open Richmond Office.

In order better to serve clients in Virginia and adjoining states, the Gilbert C. White Co., consulting engineers of Durham, N. C., plan to open an office in Richmond, Va., June 1, in charge of Preson P. Phillips. The White organization are well known consultants on waterworks, sewerage and paving and have served the states of North Carolina, South Carolina and Virginia for 30 years.

Prepares for Future Activity.

The B. Mifflin Hood Brick Co., Daisy, Tenn., manufacturers of brick, tile and other ceramic products in the South, with branches at many points throughout the country, have been developing a national production of roofing tile, getting additional plants in operation in Texas, Iowa and New Jersey. While depression has prevailed in the clay products industry, orders are now increasing and the company expects to be back on a 100 per cent production basis.

Butler Appoints Eastern Representative.

The Butler Manufacturing Company, Kansas City, Mo., and Minneapolis, Minn., has appointed Ralph B. Henn as Eastern representative with offices at 130 West 42nd street, New York. The full line of Butler manufacture, including oil field, oil storage, oil handling and oil transportation equipment, steel buildings, welded storage and underground tanks, visible pumps, buckets, funnels, carrying cans and steel barrels will be handled.

New Mellon Institute Building.

Dr. Edward R. Weidlein, director of the Mellon Institute of Industrial Research, Pittsburgh, announces that the institution will increase facilities for serving American industries by a building project that will permit material expansion of its research activities. Plans for a 4-story structure are being prepared by Janssen & Cockett, Pittsburgh, and construction is expected to begin this fall. The Mellon-Stuart Company, Pittsburgh, is general contractor. Other departments will also be enlarged.

Lincoln Welding Electrode.

A new welding electrode for use on light gauge material, to be known as Lightweld, is announced by the Lincoln Electric Co., Cleveland, Ohio, manufacturers of Lincoln Weld motors and Stable-Arc welders. The electrode was designed for use with a manual carbon arc and with from 30 to 60 amperes direct current, being adaptable to horizontal, vertical or overhead work. It gives a dense weld free from pin holes, it is said, and may be used on 16, 18, 20 or 22 gauge in making a lap, butt or corner weld.

Net Operating Income Increases.

According to the report of the Kansas City Southern Railway Company for the year ended December 31, 1929, net railway operating income of the company amounted to \$5,148,922, as compared with \$4,973,567 in 1928, an increase of \$175,354. The total mileage operated in 1929 was 883.23 as compared with 865.10 in 1928 and total railway revenues amounted to \$21,978,221 in 1929, as compared with \$21,423,896 in 1928.

Hercules Branch Manager.

The Hercules Powder Company Inc., Wilmington, Del., announces appointment of A. M. Sanford as branch manager of the Wilmington naval stores district. Mr. Sanford takes charge of sales in a territory including all the Eastern seaboard north of North Carolina except the district adjacent to New York City.

Bigelow-Liptak Southern Office.

The Bigelow-Liptak Corporation, Detroit, Mich., announces the opening of a new Southern office at 315 Bona Allen Building, Atlanta, Ga. The company manufactures furnace arches and has another Southern office in Houston, Tex.

To Address Ink Makers.

J. Mack Schantz, technical service representative, Hercules Powder Company, naval stores department, Wilmington, Del., will deliver an address on wood rosin at the Toronto convention of the National Association of Ink Makers, June 2-3.

Doyle Heads American Welding Society.

E. A. Doyle, consulting engineer of the Linde Air Products Company, New York, was elected president of the American Welding Society at the annual meeting of the society on April 25.

Engineers Inspect Are Welding.

The Engineers Society of Milwaukee recently visited the East Pittsburgh works of the Westinghouse Electric & Manufacturing Company to inspect construction of a new central engineering building costing \$1,700,000 and said to be the largest arc welded building in the world. Another Westinghouse arc welding project under construction is a \$500,000 addition to the present research laboratories.

Trade Literature

Roller Sheaves.—Engineers of the Sullivan Machinery Company, Chicago, Ill., have designed a new roller bearing sheave or tall block for use in scraper loading or slushing operations with Sullivan compressed air and electric portable hoists. The sheaves are built in 8-, 10- and 12-inch diameters and are of rugged construction, of manganese steel with side plates of electric steel castings. They are described in bulletin No. 76-K issued by the company.

Casters and Trucks.—Catalogue No. 30-CT devoted to Saginaw products, including casters and trucks, has been issued by the Saginaw Stamping & Tool Co., Saginaw, Mich. The company has made an intensive study of caster problems and has gone into the manufacture of these products very thoroughly, using steel and ball bearings and minimizing rust by Parkerizing all parts. The company also makes industrial trucks, office equipment and store fixtures.

Cotton Mills.—The Industrial Department of the Texarkana Chamber of Commerce, Texarkana, Ark.-Tex., has issued a booklet covering a survey of Texarkana and the advantages it offers for establishment of textile mills. In preparation of the publication, an attempt has been made to emphasize those features which might be considered in the location of such a plant.

Combustion Instruments.—The Hays Corporation, Michigan City, Ind., specialists in the manufacture of combustion instruments, have issued catalog TSE-30 devoted to a flue gas analyzer and portable combustion test set. The publication carries a comprehensive description of the instruments, with a large number of illustrations showing their various applications.

Anniston's Activities.—The nineteenth annual report of the United Chambers of Commerce and affiliated organizations of Anniston, Ala., was recently issued in booklet form, reviewing briefly the major services and activities during the past year of these organizations.

Lathes.—The Sebastian Lathe Company, Cincinnati, Ohio, has issued catalog No. 33, showing in picture form, with brief descriptive matter, the company's new and improved line of Gold Seal lathes in sizes 12-, 14-, 16-, 18-, and 20-inch swing.

Athens, Ga.—The Chamber of Commerce of Athens, Ga., is distributing a pamphlet prepared by C. D. Terrell, industrial engineer, Athens, outlining advantages which the city offers for establishment of industrial plants.

Editors and Boat Dealers Visit**Dodge Plant at Newport News**

Lead by Kenneth M. Smith, director of sales, a group of editors, and of Dodge distributors from the eastern United States, last week visited the new \$2,000,000 Newport News, Va., plant of the Horace E. Dodge Boat and Plane Corp. The party found the factory, as one editor expressed it, "literally spouting boats." Approximately 400 boats, representing all of the six Dodge runabout models, were in various stages of production at the plant, which employs 700 men and is turning out 40 boats a day to catch up with orders received from all over the world since the National Motor Boat Show.

Adding to its large list of distributors in this country, 21 of whom are in the South, the Dodge corporation very recently appointed the following with headquarters in Southern territory: Andrew Cowan & Co., Inc., Louisville, Ky.; Hays Supply Co., Memphis, and Auburn-Nashville Co., Inc., Nashville, Tenn., all as distributors; William Grossman, St. Louis, Mo., as dealer; and Leonardtown Motor Co., Leonardtown, Md.; Irving Stewart, Nuttall, Va., and Neucko's Place, Seabrook, Texas, as associate dealers.

Dodge representatives already established in the South are: Drennen Motor Car Co., Mobile and Birmingham, Ala.; Stanley H. Horner, Inc., Washington, D. C.; J. Millard Tawes & Co., Crisfield, Md.; The James Walker Co., Baltimore; Arthur Duvic's Sons, New Orleans, La.; Covert Boat & Engine Co., Kansas City, Mo.; R. Sealy, Galveston and Corpus Christi, Texas; Wm. A. Holt & Co., Inc., Waco; Sebo Boat Co., Houston; H. & W. Motor Corp., Newport News, Va.; T. W. Tignor's Sons, Richmond; V. T. Churchman, Jr., Charleston, W. Va.; Dixon Motor Co., Belmont, N. C., and Bensel-Brown Co., Jacksonville, Fla.

Portland Cement Association Meeting

Safety awards and trophies for distinguished progress in the field of industrial accident prevention occupied the spotlight at the spring meeting of the Portland Cement Association at the Biltmore in New York City May 26-28.

The Joseph A. Holmes Safety Award for 1929 was conferred upon the Portland Cement Association, carrying with it a citation for unusual achievement in preventing loss of life or injury to the workers employed in the cement mills of its members. In a second ceremony following the Holmes award, 27 cement mills, representing almost every producing section of the United States, were formally presented with the Portland

Cement Association Safety Trophy for 1929, awarded to each for completing the year without the accidental loss of time or permanent injury to a single workman.

Last year one-fifth of all of the operating cement mills of America completed the year without a lost time accident. According to data recently released by the National Safety Council, the cement industry's accident frequency rate for 1929 was the lowest for any industry reported and less than half the average rate for the various groups.

\$6,000,000 POWER PLANT OPERATING**Steam-Electric Unit to Supply Huge Refinery and Utilities in and Near Baton Rouge, La.**

C. W. Kellogg, President of Engineers Public Service Company, announces that the new steam and power plant of its subsidiary, Louisiana Steam Products, Inc., at Baton Rouge, La., has gone into preliminary operation.

This plant was constructed to furnish the steam and power requirements of the Baton Rouge refinery of the Standard Oil Co., one of the largest refineries in the world, and also to furnish by-product electricity to the transmission system of Baton Rouge Electric Co. and Gulf States Utilities Co., other constituent companies of Engineers Public Service Co. located in the territory.

The construction of this plant, which has cost approximately \$6,000,000, has been rushed to completion by Stone & Webster Engineering Corp. in a period of less than seven months. The boiler plant is capable of furnishing over six billion pounds of steam annually or sufficient steam for a power station of 190,000 horsepower capacity. Actually, only 60,000 horsepower of electric generating capacity is being installed, since the main purpose of the plant is to supply steam for the refining processes of the Standard Oil plant, the electricity generated in the process being in the nature of a by-product.

This plant furnishes an outstanding example of the cooperation of diverse industries for their mutual advantage.

British Cotton Shipments Decline

Exports of cotton yarns and manufactures from the United Kingdom during April amounted to £7,543,679 and the total of manufactured articles to £36,697,025 compared with £9,376,401 and £42,527,275 in March and £11,791,941 and £47,146,097 in April, 1929. For the four months ended April the figures were £37,828,771 and £165,047,735 against £49,397,455 and £192,293,345 in 1929.

MEXICO COMPLETING \$11,000,000 DAM

Project Will Irrigate 160,000 Acres on Rio

Salado—American Construction Firm
Handling Development

Laredo, Tex.—Mexico will soon complete an \$11,000,000 irrigation project on the Rio Salado, the largest of three government irrigation projects now under way. The dam, known as the Don Martin, is 82 miles southwest of this city and Nuevo Laredo, Mexico. It will irrigate about 160,000 acres in the states of Nuevo Leon and Coahuila. A storage system consists of a reservoir 60 miles west of this city with a capacity of 1,123,600 acre feet, the dam effecting this storage being located 66 kilometers upstream from Rodriguez. This dam will also divert impounded water into the main canal of the system, the latter leaving the headworks and diverging slightly northward for 42 kilometers, from which point one of its principal laterals will extend easterly to irrigate the territory of Cameron and Rodriguez. The main canal extends south from K-42, a distance of 13 kilometers, to the Salado crossing, thence in a general south-southeast direction for 120 kilometers. The area to be drained north of the river covers 30,000 hectares and south of the river 35,000 hectares. A catchment basin of the reservoir covers 30,000 square kilometers, the project being further favored by the use of an auxiliary equalization storage in Lake Salinillas with a capacity of about 13,000 acre feet at a point 30 kilometers below the intake.

The dam is an earth and gravel embankment 985 meters long, with a 234-meter concrete overflow section. An upstream concrete revetment will be constructed as a monolith and anchored to bedrock underlying the dam. The control of the spillway is effected by a system of 22 automatic radial gates supplemented by four additional gates operating by direct mechanical lift. Release of water from the reservoir is effected by two batteries of rectangular sliding gates. A series of connecting saddles will be located about 8 kilometers south of the dam, the maximum height of the dikes being 28.9 feet. A lateral system is being planned and will be built to reach each individual farm, while public roads also will be built to meet the traffic needs of the territory. Principal arteries of the drainage system are being constructed in connection with the irrigation system, open drains providing for large quantities of storm water.

The system was designed and is being constructed by the J. G. White Engineering Corp., New York, who are also

handling construction of the other two systems—one near Aguascalientes and the other near Xicotencatl.

\$850,000 Incinerator System

Washington, D. C.—The Board of Commissioners of the District of Columbia is taking steps to establish incinerators in various sections of the city. The last appropriation bill carried \$850,000 for the project.

Ingalls Furnished Steel for Huge Copper Refinery

All of the steel work for the \$4,000,000 copper refinery at El Paso, Texas, as described in the MANUFACTURERS RECORD of May 22, was furnished by the Ingalls Iron Works Co., Birmingham, Ala., it is pointed out by C. S. Finegan, assistant sales manager. The project involved the use of about 4000 tons of structural steel and the Steel Construction Co., San Francisco, Cal., a subsidiary of the Ingalls company, acted in the capacity of erectors.

\$750,000 For National Institute of Health

Washington, D. C.—A bill creating the National Institute of Health has been passed by Congress and the process of taking in the old hygienic laboratory of the United States Public Health Service will begin at once. The bill carries an appropriation of \$750,000, which will be used for new buildings and possibly to acquire sites for other structures. An additional story will be added to the present hygienic laboratory and a new building erected for storage and annual space. When the original appropriation has been used, further development of the research center will depend largely upon donations and contributions by individuals, which the Secretary of the Treasury is authorized to accept on behalf of the Government. The bill provides for the establishment of fellowships so that individual scientists may work at the Institute and contribute to the benefits of the research work of the United States. The Institute will be in charge of the Surgeon General of the United States Public Health Service, Dr. George W. McCoy to continue as director of the hygienic laboratory.

Hydro-electric Projects for Colorado River

Chicago Interests Plan \$15,000,000 Expenditure in Texas

Austin, Tex.—The State Board of Water Engineers, following its action in extending for two years permits granted Emery, Peck & Rockwood, Chicago, to build 6 dams and hydro-electric power plants on the Colorado River, has secured Dr. E. H. Sellards, associate director of the Bureau of Economic Geology of the University of Texas, to make a geological survey of sites of the proposed dams and reservoirs. Upon completion of the survey, the first two dams will be started. The entire project involves the expenditure of more than \$15,000,000, \$1,300,000 having already been spent for reservoir lands.

Preliminary work has been started on a dam near Kingsland to create a lake 34 miles long with an average width of 1 1-3 miles and an average depth of 35 feet, to store 1,225,000 acre-feet of water. The dam will be 165 feet high, 2500 feet long, 125 feet thick at the bottom and 20 feet at the top, backing water into a lake 51 miles long and 4300 feet wide. A dam near Austin will impound 1,391,530 acre-feet per year, with a storage capacity of 196,708 acre-feet. It will be 75 feet high, 1102 feet long, 60 feet thick at the bottom and 16 feet at the top. Another dam in Travis County will be 15½ miles northwest of Austin at the head of Lake Austin, to impound 1,391,530 acre-feet, with storage of 718,419, creating a lake 38 miles long and 3200 feet wide on an average. It will be 3200 feet long, 125 feet high, with a bottom thickness of 90 feet and a top thickness of 20 feet. The site of the sixth dam has not yet been determined. Emery, Peck & Rockwood now own and operate three power plants on the Guadalupe River and are awarding contracts for three more dams, besides having authority to build two additional ones on that stream. The six permits for the Colorado River were acquired from the Syndicate Power Co.

a lake 4½ miles long with an average width of 3200 feet.

A third dam will be located 18 miles west of Lampasas, to impound 1,088,710 acre-feet and to store 769,070 acre-feet. It will be 137 feet high, 690 feet long, 95 feet thick at the bottom and 20 feet at the top, backing water into a lake 51 miles long and 4300 feet wide. A dam near Austin will impound 1,391,530 acre-feet per year, with a storage capacity of 196,708 acre-feet. It will be 75 feet high, 1102 feet long, 60 feet thick at the bottom and 16 feet at the top. Another dam in Travis County will be 15½ miles northwest of Austin at the head of Lake Austin, to impound 1,391,530 acre-feet, with storage of 718,419, creating a lake 38 miles long and 3200 feet wide on an average. It will be 3200 feet long, 125 feet high, with a bottom thickness of 90 feet and a top thickness of 20 feet. The site of the sixth dam has not yet been determined. Emery, Peck & Rockwood now own and operate three power plants on the Guadalupe River and are awarding contracts for three more dams, besides having authority to build two additional ones on that stream. The six permits for the Colorado River were acquired from the Syndicate Power Co.

FINANCIAL NEWS

Bond Issues Proposed

Arkansas—State Treas., Ralph Konce, Little Rock, reported, advises no date has been set for re-offering of \$18,000,000 highway bonds; lately noted bids opened June 18 for bonds. 5-22

Ark., Fayetteville—Airport—City, T. S. Tribble, Mayor, voted \$20,000 bonds; J. C. Massie, Clk. 4-17

Ark., Helena—Hospital—City, R. G. Howard, Clk., defeated \$150,000 bond issue; lately noted election May 14. 4-3

Ark., Russellville—City Council plans \$63,000 bond issue for paving and for retiring outstanding bonds.

D. C., Washington—Washington Suburban Sanitary Coms., T. Howard Duckett, Chmn., Tower Bldg., Fourteenth and K St., N. W., Washington, receives bids June 4 for \$300,000, 4½% Series "V" Dist. bonds.

Fla., Panama City—Bay County Special Tax School Dist. No. 4 votes May 30 on \$65,000 bonds.

Ga., Atlanta—City, I. N. Ragsdale, Mayor, voted \$65,000 bonds for municipal building, containing city hall departments, fire dept. and auditorium.

La., Amite—Tangipahoa Parish voted \$20,000 School Dist. No. 105 bonds; Dr. J. H. Beatty, Pres. Parish School Board. 4-24

La., Columbia—Caldwell Parish Police Jury, R. R. Redditt, Sec., receives bids June 10 for \$45,000, not to exceed 6% Road Dist. No. 1 bonds.

La., Mount Herman—Washington Parish voted \$15,000 school bonds; Parish School Bd., D. H. Stringfield, Sec., Franklinton, plans receiving bids in about 60 days for bonds. 4-24

La., Rayne—Bd. of Comms. of First Ward Drainage Dist. called election for June 16 on \$90,000 Sub-Drainage Dist. No. 2 bonds.

Miss., Cumberland—Cumberland Consolidated School Dist. voted \$12,000 bonds.

Miss., Duck Hill—Montgomery County Bd. of Supvrs., Otis E. Brannon, Clk., Winona, receives bids June 2 for \$50,000 5½% Duck Hill Consolidated School Dist. bonds. 5-15

Miss., Okolona—City Hall—City voted \$60,000 bonds. 3-20

Miss., Philadelphia—Hospital—Neshoba County Bd. of Supvrs. called election for June 6 on \$20,000 bonds.

Miss., Smithville—Monroe County Bd. of Supvrs., Amory called election for June 2 on \$30,000 Smithville Special Consolidated School Dist. bonds.

Miss., Yazoo City—Road—Yazoo County Bd. of Supvrs., F. J. Lowe, Clk., receives bids June 2 for \$60,000, not to exceed 6%, Road Dist. No. 3 bonds. 5-15

Miss., Winona—Montgomery County, Bd. of Supvrs., Otis E. Brannon, Clk., receives bids June 2 for \$50,000, 6% Montgomery Special Consolidated School Dist. bonds.

Mo., Lebanon—City plans voting bonds for \$80,000 sewer.

N. C., Beaufort—Funding—Carteret County Comms., R. W. Wallace, Clk., receive bids June 2 for \$108,000, 6%, \$1000 denom. bonds.

N. C., Burns—Hospital—Yancey County Comms., Pearle L. Huskins, Clk., receive bids May 31 for \$30,000, 5%, \$1,000 denom. bonds.

N. C., Dobson—School—Surry County Comms., W. E. Lindsay, Chmn., Mt. Alry, plan receiving bids for \$72,000 bonds. 5-15

N. C., Sanford—Hospital—Lee County Comms., John W. McIntosh, Clk., received bids June 3 for \$62,500 bonds; bidders to name rate of interest. 4-17

N. C., Sanford—Town, Harvey Kennedy, Clk., receives bids June 3 for \$50,000, \$1000 denom. not to exceed 6% street, sewer and water bonds.

N. C., Williamston—Street—Town, G. H. Harrison, Clk., receives bids June 6 for \$75,000 \$1000 denom. not to exceed 6% bonds.

Fla., Pahokee—City considering \$65,000 bond election for water, street and sidewalks.

La., Cameron—Courthouse, Jail—Cameron Parish Police Jury called election for July 8 on \$125,000 bonds.

Md., Funkstown—Water—City voted \$15,000 bonds.

Md., Baltimore—City, Wm. F. Broening, Mayor, votes in Nov. on \$16,000,000 loans: \$10,000,000, harbor improvement; \$2,500,000,

airport; \$2,000,000, bridge and paving; \$1,500,000, school; Chas. F. Gob, Ch. Engr.

Mo., Agency—Agency Consolidated School Dist. votes May 31 on \$28,000 bonds; D. L. Staggs, Sec. School Bd.

Mo., Sikeston—City, P. H. Stevenson, Clk., receives bids for \$130,000 electric light plant and distribution system bonds. 4-10

N. C., Dobson—Surry County Comms. authorized sale of \$72,000 school bonds.

Okla., Elk City—Water—City plans voting soon on \$50,000 bonds; C. A. Wood, Engr., Perrin Bldg., Oklahoma City.

Okla., Guthrie—City votes soon on \$450,000 municipal improvement bonds.

Okla., Lawton—City, Todd Sanders, Clk., rejected bids for \$750,000, not to exceed 6% improvement bonds; lately noted bids April 29. 4-17

Okla., Nichols Hill, Oklahoma City—Town receives bids June 3 for \$575,000 not to exceed 6% bonds: \$125,000, storm sewer; \$150,000, sanitary sewer; \$250,000, water; \$50,000, parks; T. A. Montague, Town Clk.

Tenn., Chattanooga—City, Roger Crox, Commr., plans receiving bids soon for \$717,000 bonds for annexation of various territories.

Tenn., Bristol—Street—City Bd. of Mayor and Commr. authorized issuance of \$24,000 bonds to finance improvement districts 67 and 68.

Tenn., Jackson—Armory—City plans voting on \$75,000 bonds.

Tenn., Memphis—City, D. C. Miller, Clk., receives bids July 1 for \$860,000 bonds: \$400,000, improvement; \$460,000 street improvement; the latter were recently incorrectly referred to as "funding" bonds. 5-22

Tenn., Newbern—Town voted \$35,000 school bonds.

Tenn., Trenton—Gymnasium—City voted \$15,000 bonds.

Tex., Alpine—City votes June 14 on \$121,000 5½% bonds to take up paving and other warrants previously issued.

Tex., Amarillo—Water—City voted \$380,000 bonds; Ernest O. Thompson, Mayor.

Tex., Beaumont—Road—Jefferson County, B. B. Johnson, County Judge, considering \$2,000,000 bond election soon.

Tex., Brownwood—Woodlawn Heights Community plans voting on \$23,000 school bonds.

Tex., Harlingen—Airport—City plans voting soon on \$150,000 bonds.

Tex., Linden—Linden Independent School Dist. voted bonds.

Tex., Meridian—Bosque County Road Dist. No. 11 votes May 31 on \$10,000, 5% bonds.

Tex., Houston—City, W. E. Monteith, Mayor, plans selling \$1,500,000 bonds recently voted: \$500,000, sewer; \$700,000, water; \$300,000, other work.

Tex., Mason—Bd. of Education, Walter M. Norton, Sec., receives bids soon for \$20,000 5% \$1000 denom. Independent School Dist. bonds.

Tex., Pampa—Road—Gray County considering \$2,500,000 election.

Tex., Raymondville—Willacy County Water Control and Improvement Dist. No. 1 considering selling \$1,250,000 bonds.

Tex., Rush—Cherokee County Comms. Court plans \$750,000 bond election in Road Dist. No. 2.

Va., Brookneal—City, Mrs. W. H. Booth, Recorder and Sec. plans selling water and sewer bonds; F. W. McWane Co., Lynchburg, has charge of sale of bonds. 5-15

Va., Luray—Town defeated \$164,000 bond issue: \$86,000, sewer; \$55,000, water; \$23,000, street and bridge.

Va., Onancock—Street—Town, E. F. Evans, Clk., receives bids May 31 for \$10,000 5% bonds.

W. Va., Beckley—Street—City voted \$200,000 bonds.

Va., North Tazewell—City votes May 31 on \$18,000 bonds: \$13,000, school; \$5000 to purchase fire-fighting equipment.

W. Va., Hurricane—Sewer—City voted \$35,000 bonds.

W. Va., Hollidays Cove—Street—City voted \$48,000 bonds.

Bond Issues Sold

Fla., Miami Beach—City, C. W. Tomlinson, Clk., sold \$256,000 of \$698,000 street and sewer bonds and \$19,000 of \$145,000 bridge and water bonds, all 6%, to Natco Corp., Miami, at 97. 4-24

Miss., Hazlehurst—City Council sold \$9000, 6% paving bonds to Capitol National Bank, Jackson, Miss., at par.

Miss., Walnut Grove—Leake County Bd. of Supvrs., B. J. Barnett, Chancery, Clk., Carthage, sold \$60,000, 6%, \$1000 denom. Walnut Grove Consolidated School Dist. bonds to Capitol National Bank, Jackson, at \$430 premium. 5-1

N. C., Charlotte—City, R. W. Rigsby, Mgr., sold \$810,000, 4½% improvement bonds at 101.337 to Rutter & Co., New York City; \$250,000, sewer; \$250,000, water; \$100,000, underpass; \$35,000, incinerator; \$160,000, street; \$15,000, garage. 5-15

La., Amity—Tangipahoa Parish School Bd., W. R. Dunn, Sec., sold \$25,000 6% School Dist. No. 104 bonds to Continental Bank & Trust Co., New Orleans, at par, accrued interest, expenses and premium of \$501. 4-10

La., Ville Platte—Town, George L. Fontenot, Mayor, sold \$26,000 bonds to Chas. F. Bogani Investment Securities Co., Opelousas, at \$278 premium. 4-3

Okla., Sand Springs—Bd. of Education, E. F. Dixon, Clk., sold \$41,000, 5% Sand Springs School Dist. bonds to Sand Springs Home, Inc., at par. 5-8

S. C., Georgetown—Georgetown County sold \$70,000, 5% funding bonds to Provident Savings Bank & Trust Co., Cincinnati, at \$1155 premium.

Tenn., Covington—School—Town, J. A. Shelton, Mayor, sold \$50,000, 5% bonds to Caldwell & Co., Nashville, at par and accrued interest. 5-22

Tenn., Knoxville—Park—City Council, George Dempster, City Mgr., sold \$100,000, 4¾% park purchase bonds to Caldwell & Co., Nashville at 102.051. 4-17

Tex., Fairfield—School Bd., W. A. Parker, Pres., sold \$28,000, 5% Fairfield School Dist. bonds to State Dept. of Education at par. 5-1

Va., Winchester—City, L. R. Dettra, Mgr., sold \$145,000, 4½% sewer, street, school and refunding bonds jointly to H. M. Bylesby & Co. and Morris Mather & Co., both New York, at 99.46. 4-24

Building and Loan Associations

Fla., Pensacola—Investors Loan Corporation, 303 Thiesen Bldg., organized; H. J. Albrecht, 318 E. 17th St., all Jacksonville; L. S. Brown, 107 E. Gregory St., Pensacola, in charge.

Tenn., Elizabethton—Elizabethton Building & Loan Assn., 450 Elk Ave., capital \$250,000, organized; C. L. Grinsdaff, Pres.; Sam T. Millard, Sec.-Treas.

Tenn., Kingsport—Kingsport Building & Loan Assn., capital \$500,000, chartered; J. Fred Johnson, W. R. Jennings, C. P. Edwards, Jr.

Va., Clifton Forge—Industrial Loan Co., capital \$100,000, organized; Eugene Mathews, Pres.; Jed Wilson, Sec.-Treas.-Cashier. 5-22

New Financial Corporations

Ky., Hickman—First National Bank of Hickman, capital \$50,000, organized; W. B. Amberg, correspondent.

La., New Orleans—Di Bartolo Realty & Securities Co., Inc., capital \$40,000, chartered; Catherine Di Bartolo, Pres., 2215 Pine St.

La., New Orleans—Globe Investment Co., Inc., capital \$25,000, chartered; Saul Sokolosky, 1043 Canal Bank Bldg.

Miss., Indianola—Merchants Bank & Trust Co. organized; Ira L. Gaston, Pres.; A. C. Cox, V.-P.; supersedes Sunflower Bank, recently closed.

Mo., St. Louis—Grand-Hartford Investment Co., capital \$100,000, chartered; John T. Fitzimmons, Title Guarantee Bldg.

Okl., Hanna—C. C. Walker and A. S. B. Bonny, both Okemah, Okla., granted charter to establish state bank at Hanna.

Va., Richmond—Managers Securities Corporation, capital \$20,000, chartered; Cyrus W. Beale, Pres., American Natl. Bank Bldg.

Va., Richmond—Craigshare Corporation, capital \$20,000, chartered; Cyrus W. Beale,

Pres., American Natl. Bank Bldg.; securities.

Barnett National Bank, Arthur F. Perry, Vice-Chmn. of Bd., Jacksonville, Fla., acquired majority of stock of St. Augustine National Bank, G. B. Lamar, Pres., St. Augustine; C. S. L'Engle, V-P, of Barnett Bank, will represent bank on board of St. Augustine National. 5-15

Bastrop State Bank & Trust Co., Geo. T. Madison, Pres., Bastrop, La., plans increasing capital to \$100,000.

Farmers and Merchants' Bank, J. F. Stewart, Pres., and First National Bank, J. E. Freeman, Pres., both Hartselle, Ala., merged with combined resources, nearly \$1,000,000, business being carried on at First National Bank, Main St. and Bee Line Highway; officers and directors include J. E. Freeman, Sr. and Jr., A. D. Sample, J. F. Stewart.

First National Bank, Oscar Wells, Pres., and American Traders' National Bank, J. C. Persons, Pres., both Birmingham, Ala., merged with combined capital of \$5,000,000, and over \$70,000,000 resources; Oscar Wells, Pres. of Bd.; J. C. Persons, Pres.; W. W. Crawford, V-Chmn.

Hamilton National Bank, T. R. Preston, Pres., Chattanooga, Tenn., acquired Highland Trust & Savings Bank; on June 2 will become Highland Park Branch of Hamilton National, and manager of Highland Branch; Branch of Highland Trust & Savings Bank, will be consolidated with main office; W. N. Dietzen, will be Asst. Cashier of Hamilton National, and manager of Highland Branch; P. A. Northern, Asst. Mgr.

North Carolina Corporation, Oscar C. Burnett, Pres., subsidiary of North Carolina Bank & Trust Co., Greensboro, N. C., opened office at 501 Commercial Bank Bldg., Charlotte, with Allen C. Ewing in charge.

Security State Bank, Dave Schonwald, Pres., purchased Blackwell Exchange Bank, W. H. Pauley, Pres., both Blackwell, Okla.; total deposits over \$2,000,000.

Arkansas Offers \$18,000,000 Road Bonds

Little Rock, Ark.—The state of Arkansas opens bids June 18 for the purchase of \$18,000,000 highway bonds. This is the third time this year that tenders have been invited on this issue, the original plan being to sell the bonds on January 11, but owing to unsettled market conditions at that time the sale was postponed until February 12.

Big Birmingham Banks Merge

Birmingham, Ala.—Directors of the First National Bank and the American Traders' National Bank, two of Birmingham's largest financial institutions, have voted to merge the banks under the name of the First National Bank of Birmingham, effective July 1. The deal will involve the American Traders' Securities Corporation, controlling five branch banks in the Birmingham district. Merger plans contemplate a capital of \$5,000,000 and surplus of \$5,000,000, the combined deposits to approximate \$55,000,000, while the combined resources are estimated at more than \$72,000,000. Oscar Wells of the First National, becomes chairman of the board of the new bank; W. W. Crawford, of the American Traders', will be vice-chairman of the board; J. C. Persons, American Traders', president, and K. W. Berry, First National, executive vice-president.

\$810,000 Charlotte Bonds Sold

Charlotte, N. C.—Charlotte bonds in the amount of \$810,000 have been sold as 4½% to Rutter & Co., New York, on a bid of 101.337. The issue includes \$250,000 sewer bonds, \$250,000 for water extensions, \$100,000 for an underpass, \$35,000 for an incinerator, \$160,000 for streets and \$15,000 for a garage.

\$3,300,000 POSTOFFICE STARTED

Several Sub-Contracts Awarded on Baltimore Building

Work of razing the old Baltimore post-office building at Calvert and Lexington streets to make way for a \$3,300,000 Federal building to be erected on the site has been started. Contract for razing the building and excavating for the foundations was awarded to Potts & Callahan, Baltimore. The N. P. Severin Co., Chicago, Ill., general contractors, has awarded to date the following sub-contracts:

Structural steel—New York branch of the Lehigh Structural Steel Co., Allentown, Pa.

Cut stone—Indiana Limestone Company, Bedford, Ind.

Granite—Perry Brothers Granite Co., Concord, N. H.

\$6,825,000 FOR SOUTH CAROLINA ROADS

State Opens Bids on Projects Totaling 300 Miles

Columbia, S. C.—Low bids opened May 20 for constructing approximately 300 miles of state highway aggregate \$6,825,000. The low bid for the largest project was that of the Roberts Paving Co., Salisbury, Md., at \$1,186,787, for 41.5 miles of highway on Route 40. Ben M. Sawyer, chief highway commissioner, and Charles H. Moorefield, state highway engineer, will report the low bids to the state Highway Commission and contracts are expected to be awarded soon.

Ten-Year Tax Exemption for Industries

Recognizing the importance of bringing in industries, an ordinance has been passed at La Place, La., by St. John the Baptist Parish, to exempt from local taxation for a period of ten years all industries locating in the parish.

St. John's Parish is on the Mississippi River, a few miles above New Orleans, with a water route to the sea, and has a good harbor, as well as good railroad facilities, natural gas and interconnecting electric power among its many advantages.

SINISTER FORCES

are attempting to keep from the American people the startling facts in this amazing new novel.



"SINISTER SHADOWS"

BY EDWIN MARSHALL HADLEY

Because "SINISTER SHADOWS" endangers the success of the Red program in this country, underground efforts are being made to keep it from the public. Influenced by Pink and Red reviewers and critics, or by their own redness, some booksellers will not supply it. You will be amazed to see that in his preface, the author prophesied this very treatment, that is proving futile in spite of those who seek to wreck America.

"SINISTER SHADOWS" is one of the most important books ever written for real Americans. It shows the causes leading up to the Russian Revolution. It describes the efforts of communistic Red Russia to destroy America. It fearlessly names the men who are doing the work of Red Russia in this country by advocating Socialism-Communism.

Hon. Frank O. Lowden, former governor of Illinois: "I have read 'Sinister Shadows' with exceeding interest. It reveals much that justifies the title."

Hon. Edwin P. Morrow, former governor of Kentucky: "To me, 'Sinister Shadows' is a watchman's warning cry from the towers of freedom—a book that Americans need."

Judge John P. McGoorty, superior Court, Chicago: "It is a fine bit of writing, fascinating as it is scholarly. I can only say to my friends and the public, read it without delay."

IF YOUR BOOKSELLER REFUSES TO SUPPLY YOU WITH A COPY OF "SINISTER SHADOWS" USE THE COUPON AND ORDER DIRECT FROM THE PUBLISHERS,

THE TOWER PRESS, INC.,
180 N. Michigan Ave., CHICAGO.

THE TOWER PRESS, INC., M. R.
180 North Michigan Ave., Chicago, Ill.
Please send me the book "Sinister Shadows" by Edwin Marshall Hadley for which I will remit \$2.50 within 10 days. In consideration of enclosing payment with this coupon, you may send me without any further cost the booklet entitled Red Russia's Menace, by Mowrer.

Name

Address

City State

AT YOUR SERVICE IN BALTIMORE

MARYLAND TRUST COMPANY
Northwest Corner
Calvert and Redwood Streets

MEMBER FEDERAL RESERVE SYSTEM

HELPFULNESS

is the motto of this Bank.

Let us tell you about it.

BALTIMORE COMMERCIAL BANK

GWYNN CROWTHER, President

26 South Street, Baltimore, Md.

Capital and Surplus \$1,350,000.00 Member Federal Reserve System

Corporate Financing Arranged**Mergers and Reorganizations Effected**

With connections seeking extensive outlets in constructive financing in the South, this announcement of facilities now available to Southern business houses embraces a most cordial invitation to investigate the solutions offered in response to capital needs. Capital furnished for both new and old enterprises.

WILLIAM AKERS

Long Distance Local Phone

Walnut 3186

1314-15 Atlanta Trust Co. Bldg.

ATLANTA, GEORGIA

Taylor, Wilson & Co. Inc.
INVESTMENT SECURITIES

WE BUY MUNICIPAL BONDS

Public officials are invited to avail themselves of our facilities for preparation of legal details.
Your inquiry receives prompt attention
701-2 Dixie Terminal Bldg. CINCINNATI

THE ROBINSON-HUMPHREY COMPANY MUNICIPAL AND CORPORATION BONDS

Established 1894

ATLANTA, GA.

We Underwrite MUNICIPAL BONDS in States of
GEORGIA and SOUTH CAROLINA

We Buy Bonds
City, County, School and Road from
Municipalities and Contractors
WRITE
THE PROVIDENT SAVINGS BANK & TRUST CO.
CINCINNATI OHIO

Municipalities
Corporations
Railroads
Financed
MARX & CO.
BIRMINGHAM
ALABAMA

THE OSCAR T. SMITH & SON CO.

Manufacturing

BANK AND COMMERCIAL STATIONERS

407-9-11 E. Saratoga Street

BALTIMORE, MD.

CHARACTER**QUALITY****— SERVICE —****JOHN NUVEEN & CO.**

First National Bank Building

CHICAGO

We purchase SCHOOL, COUNTY and MUNICIPAL BONDS. Southern Municipal Bonds a Specialty.

Write us if you have bonds for sale.

HAVE YOU BONDS FOR SALE?
WE BUY ALL CLASSES OF MUNICIPAL BONDS,
INCLUDING CITY, COUNTY, SCHOOL,
PAVING, ROAD AND DRAINAGE

The Hanchett Bond Co. Inc.
39 SOUTH LA SALLE ST. CHICAGO

A Far-Reaching Movement by Coal and Heating Interests

Cushing's Survey recently stated that a most venturesome and far-reaching movement has been launched by the coal and heating interests of the country.

"On May 8," so writes George H. Cushing, "there assembled in Chicago a conference of coal producers, coal merchants, and the manufacturers of coal-burning equipment. They formed an organization, a committee. On that committee will be representatives of National Coal Association; the Anthracite Institute; American Wholesale Coal Association; National Retail Coal Merchants Association; National Warm Air Heating Association; Institute of Boiler and Radiator Manufacturers; Heating and Piping Contractors National Association; Stoker Manufacturers Association; and the Mid-West Stoker Association. This committee is designed to work out a program, the purpose of which will be to install in every building the kind of coal-burning equipment which will best serve the purpose of the owner of that equipment. And this means that in time the committee, or its successor, will work with the architects of the nation to the end that as buildings are remodeled or constructed, particular care will be taken to see that the coal-burning equipment is just right for the purpose in mind. In other words, it is the beginning of the removal of ignorance from the selection of furnace equipment. And that means the beginning of the reform of fireroom practice throughout the nation.

"I phrased that purpose carefully, because it is undoubtedly the biggest thing that has ever been attempted by this or any other nation. And you do not get the size of it until you understand that many coals have had a sale merely because furnace equipment was installed which would allow their use only. That is, one of the coals represented in that group held the dominance of a whole territory for a long period merely because the people built houses with small chimneys, which would allow the use only of a coal the gases of which were liberated slowly. Erect in those same houses larger chimneys with a stronger draft, and put into the firerooms a different kind of equipment, and that particular coal no longer has a monopoly of that market.

"And yet, here is a movement that proposes to eliminate such ignorance from the construction of chimneys and fire-room equipment in future, and to install equipment scientifically adjusted to the needs of each particular plant. In other words, if this movement carries through, there will be installed equipment capable of burning the worst coal available to a community, leaving to the producers of the better grades the burden of proving that quality in coal is worth-while, after all. This is quite the most venturesome thing and the most far-reaching that I have seen in the coal industry in my prolonged contact with it."

\$21,000,000 CONTRACT FOR TWO SHIPS

United States Lines to Build 30,000-Ton Vessels

The United States Lines, Inc., Paul W. Chapman, president, has contracted with the New York Shipbuilding Co., Camden, N. J., for two 30,000-ton liners to cost \$21,000,000. These ships will be the largest ever built in the United States, it is said, having a length of more than 700 feet and a beam of 86 feet, with accommodations for 1300 passengers in three classes. They will have a speed of at least 20 knots and will be operated on the New York-Southampton run with the Leviathan until two larger liners planned to run with the Leviathan are constructed. Upon the completion of the two larger ships, the 30,000-ton vessels will operate on the New York-Hamburg run.

The contract marks the beginning of a \$90,000,000 building program by the United States Lines under an agreement with the Government. The first of the ships is expected to be completed within 26 months and the second within 30 months. Both will be equipped with

large rooms in Georgian and Jacobean design, theater facilities, tiled swimming pools and other conveniences.

Steel Founders Standardize

The Steel Founders' Society of America, Inc., New York, through its managing director, Granville P. Rogers, has recently adopted and issued a Standard Sales Agreement, Order Acceptance, Quotation Sheet, and a set of Standard Trade Customs for the industry. Its growth in recent years has made it desirable to clarify and simplify the many questions arising between buyers and sellers, to secure a better understanding of contractual relations. It is anticipated that the buyer will be benefited by a standard practice which places quotations and estimates on a known basis and which calls also for uniform painting of patterns to indicate special treatment. The foundry's liability, inspection, shipping and terms are stated and are described as the result of cumulative experience in solving these questions for the best interests of both parties. Arbitration of claims is a forward step in promoting a more equitable relationship between buyer and seller.

Canning Orange and Grape Fruit Juice

In reply to an inquiry as to the progress the W. J. Howey Company is making in the canning of orange juice and grapefruit juice, W. J. Howey, of Howey-in-the-Hills, Fla., writes the MANUFACTURERS RECORD, in part, as follows:

"It is true that chemists have been skeptical of any process which seeks to preserve in cans extracted juice of grapefruit and oranges, and because this organization has perfected a process whereby these juices are placed in cans, we believe we are entitled to credit for having blazed a trail to new commercial possibilities for the growers of citrus.

"Our process for canning grapefruit juice and orange juice is unlike any other we know of, for the reason that we neither freeze nor cook the juice, nor add sugar or other ingredients or preservatives of any kind. Our process consists of precooling and hermetically sealing in charcoal-rolled tin cans the pure juices, these cans going through a sterilization, but not cooking, process, and a final cooling process.

"We have a juice plant with a maximum capacity of 5,000 gallons every 24 hours, and we submit that we have successfully placed in cans without loss of vitamins or flavor the juices of grapefruit and oranges. There are other concerns canning in their own way grapefruit juice, but, so far as we know, we are one of the three concerns canning orange juice.

"We have found that these canned juices remain palatable over an indefinite period, and that within a reasonable

marketable period flavor of the fresh fruit is retained. Commercial success of our process is demonstrated to us by the fact that demand for our juices exceeds the supply."

The Tribune of Howey in a recent issue reports that the W. J. Howey Company has a modernly equipped fruit juice plant, with a capacity of 4,000 to 5,000 gallons of pure fruit juices every 24 hours, and states that Mr. Conrad, superintendent of the plant, after years of experimentation has evolved a process of hermetically sealing in cans pure grapefruit juice and orange juice. It is said the pure fruit juices are extracted and placed in vacuum sealed cans, neither sugar nor any other ingredient being added to the juice, which retains its flavor and health-giving vitamins over long periods of time.

Since the foregoing was put in type a number of cans of this orange juice and grapefruit juice from the Howey Company have been tested by members of the staff of the MANUFACTURERS RECORD, and all who have had that privilege agree that the orange and grapefruit juice was fully equal to the juices from a fresh orange or grapefruit when in its most perfect condition. The success of the Howey Company ought to be of enormous advantage to the whole citrus industry of Florida.

"Three Man Gravel Plant"

COSTS \$25,000.00 complete, works one operator and two laborers, produces very much cheaper. Recently completed and thoroughly tested. Turns out 15 cars gravel and same amount sand daily and can be run at night the same as day. Can be operated anywhere and turns out any size required on short notice. Two sizes sand. Up-keep very small.

Alderson's Receiving, Separating and Stripping Tower, costs \$1800 complete in place. Added to any cable way plant, makes possible stripping easily and cheaply—no additional machinery—gets rid of all surplus waste and mud before material reaches cleaning plant. Cleans better and greatly increases output—about 40%.

*Consulting, planning, doctoring work done.
Very best of references.*

Twenty years actual experience, all departments, from bottom to president, every kind of plant. Write me about your troubles or plans. Reasonable charges—agreed upon in advance.

A. D. ALDERSON

427 Carondelet St. New Orleans, La.

Industrial and Commercial Sites

in and around

CHATTANOOGA, TENNESSEE

We will be glad to serve you

BROWN & CO., Inc.

#11 East 8th Street Chattanooga, Tenn.

OUR CLOCKS Keep tab on your Employees
Watch your Watchman
CLOCKS for the OFFICE, FACTORY,
SCHOOL and HOME

L. E. KAISER KLOCK CO.
221 N. Liberty St. Baltimore, Md.
Let us send you a relief clock and repair yours

IF YOU WANT TO GET
Southern Business
Advertise in the
MANUFACTURERS RECORD

Wonderful Bargain!

4,600 acres of land.
6 miles water front.
15 miles roads.
Taxes \$600 annually.

KINLOCH

About 3,000 acres.
Fronting about three miles on hard-surface road.

Twenty-eight miles east of Fredericksburg. Sixteen miles from Milford, on R. F. & P. R. R., operating 30 passenger trains daily.

Eleven miles of good roads around this farm. Main residence brick building, four years in construction (1845 to 1849), with eleven baths, water, electric light, and modern conveniences. Italian marble mantels and finest plaster-of-paris work and woodwork.

Frame stables for thirty horses, barns, and garage, and all other necessary outbuildings. About twelve miles from Stratford, birthplace of General Lee.

About fifteen miles from Wakefield, birthplace of General Washington.

Two hours ride by fast auto from Washington, the Capital of the greatest nation on earth.

This magnificent estate offered together with
PORT MICOU

About 1,600 acres.
Fronting six miles on Rappahannock River.
Duck marsh.
Wharf.

KENILWORTH FARM

9 miles South of Fredericksburg, Va., on the New York-Florida Highway. Near great battlefields of Chancellorsville, Wilderness and Spotsylvania. 400 acres. \$30,000.00.

SHELBOURNE PLANTATION

15 miles from Fredericksburg, Va., on the main King's Highway, and on Rappahannock River. House (brick and frame) has lights, water and sewerage, and 5 baths, all modern plumbing. 100 acres. \$25,000.00.

MOUNT STUART

20 miles east of Fredericksburg, Va., near Potomac River. Brick and frame dwelling, electric lights, water and sewerage, with 6 baths and all modern plumbing. 350 acres. \$40,000.

*Card to inspect property
can be had by addressing*

VIRGINIA CENTRAL RAILWAY
P. O. Box 1435, Richmond, Va.



— PROPOSALS —

BOND ISSUES

BUILDINGS

PAVING

GOOD ROADS



Bids close June 12, 1930.

War Department, Office Constructing Quartermaster, Fort Bragg, N. C. Sealed proposals in triplicate will be received until 10 A. M., June 12, 1930, and then publicly opened, for the installation of night flying lighting system at Pope Field, Fort Bragg, North Carolina. \$25.00 deposit certified check, payable to Treasurer of United States, required for drawings, etc. Further information on request.

Bids close June 16, 1930.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., May 20, 1930.—SEALED PROPOSALS will be opened in this office at 3 p. m., June 16, 1930, for furnishing all labor and materials and performing all work necessary for the removal of old heating boiler and installation of new boiler in the U. S. post office at Gainesville, Fla. Drawings and specifications may be obtained from the custodian at the U. S. post office at Gainesville, Fla., or at this office in the discretion of the supervising architect. JAS. A. WETMORE, Acting Supervising Architect.

Bids close June 30, 1930.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., May 24, 1930.—Sealed bids will be opened in this office at 3 p. m., June 30, 1930, for the construction (except elevator) of the U. S. custom house, post office, etc., at Alexandria, Va., including the demolition and removal of all existing buildings on the site. Drawings and specifications, not exceeding six sets, may be obtained at this office in the discretion of the Supervising Architect by any satisfactory general contractor, and provided a deposit of \$25.00 is made for each set to assure its prompt return. Checks offered as deposits must be made payable to the order of the Treasurer of the United States. JAS. A. WETMORE, Acting Supervising Architect.

Bids close July 1, 1930.

SEALED BIDS, in triplicate, subject to the conditions contained herein, will be received by the U. S. Veterans' Bureau, Room 764, Arlington Building, Washington, D. C., until 11 A. M., July 1, 1930, and then publicly opened, for furnishing all labor and materials and performing all work required at U. S. VETERANS' HOSPITAL, NORTHPORT, LONG ISLAND, NEW YORK, for CONSTRUCTION OF BUILDINGS AND UTILITIES, including roads, walks, grading and drainage. This work will include excavating, reinforced concrete construction, hollow tile, brick work, cut stone, cast stone, marble work, floor and wall tile, rubber tile and linoleum floors, iron work, steel sash, steel stairs with slate treads, metal stall partitions, steel lockers, slate, metal and built-up roofing, roof ventilators, metal lathing, plastering, carpentry, metal weatherstrips, insect screens, window shades, painting, glazing, hardware, plumbing, heating, electrical work, electric elevators and outside sewer, water, steam and electric distribution systems. SEPARATE BIDS will be received for (a) General Construction (including the plumbing, heating and electrical work); (b) Electric Elevators; all as set forth on bid form. Bids will be considered only from individuals, firms or corporations possessing satisfactory financial and technical ability, equipment and organization to insure speedy completion of the contract, and in making awards the records of bidders for expedition and satisfactory performance on contracts of similar character and magnitude will be carefully considered. At the discretion of the Director, drawings and specifications may be obtained upon application to the Constructing Division, Room 764, Arlington Building, Washington, D. C. Deposit with application of a check or postal money order for \$75.00, payable to the TREASURER OF THE UNITED STATES, is required as security for safe return of the drawings and specifications within ten days after date of opening bids. FRANK T. HINES, Director, May 28, 1930.

GENERAL INFORMATION

About Proposal Advertising in Manufacturers Record

PUBLICATION DAY: Thursday.
FORMS CLOSE: 10 A. M. Tuesday.

When too late to send copy by regular mail to reach us by 10 A. M. Tuesday, forward by night letter or air mail when possible.

THE DAILY CONSTRUCTION BULLETIN OF THE MANUFACTURERS RECORD

Published every business day, gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Construction Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened or when daily insertions are necessary to meet legal requirements.

The rate is the same for both publications—35 cents a line each insertion.

Bids close June 19, 1930.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., May 22, 1930.—SEALED BIDS will be opened in this office at 3 p. m., June 19, 1930, for remodeling and enlarging the U. S. post office at Bridgeton, N. J. Drawings and specifications may be obtained from the custodian of the building, or at this office in the discretion of the supervising architect. JAS. A. WETMORE, Acting Supervising Architect.

Bids close June 9, 1930.

\$2,035,000.00 4½% Bonds

Richmond, Va.

Sealed bids will be received by the Committee on Finance of the Council of the City of Richmond, Virginia, in Room 312, in the City Hall, until 5 o'clock P. M., Eastern Standard Time, on Monday, June 9, 1930, for the purchase of the following described bonds of said city, viz.:

\$500,000.00 Street Paving Bonds, dated July 1, 1930, bearing interest at the rate of four and one-half per centum (4½%) per annum, payable semi-annually on January 1st and July 1st, and maturing July 1st, 1940.

\$400,000.00 Sewer Bonds, dated July 1, 1930, bearing interest at the rate of four and one-half per centum (4½%) per annum, payable semi-annually on January 1st and July 1st, and maturing July 1st, 1964.

\$635,000.00 School Bonds, dated July 1, 1930, bearing interest at the rate of four and one-half per centum (4½%) per annum, payable semi-annually on January 1st and July 1st, and maturing July 1st, 1964.

\$250,000.00 General Improvement Bonds, dated July 1, 1930, bearing interest at the rate of four and one-half per centum (4½%) per annum, payable semi-annually on January 1st and July 1st, and maturing July 1st, 1964.

\$150,000.00 Gas Works Bonds, dated July 1, 1930, bearing interest at the rate of four and one-half per centum (4½%) per annum, payable semi-annually on January 1st and July 1st, and maturing July 1st, 1964.

\$100,000.00 Water Works Bonds, dated July 1, 1930, bearing interest at the rate of four and one-half per centum (4½%) per annum, payable semi-annually on January 1st and July 1st, and maturing July 1st, 1964.

All of the bonds will be of the denomination of \$1000.00 each and in coupon form, payable to bearer, with the privilege of registration as to principal only, or as to both principal and interest. Principal and interest will be payable at the office of the City Comptroller or (unless the bonds are registered) at the office of the fiscal agent of the City of Richmond in the City of New York. Bids should be enclosed in a sealed envelope, marked "Proposal for Bonds," and addressed to Landon B. Edwards, City Comptroller, Room 103 City Hall, and must be accompanied by a certified check upon an incorporated bank or trust company for 1½ per cent of the face amount of the bonds bid for. For further information apply to the Comptroller.

The right is reserved to reject any and all bids.

The successful bidders will be furnished with the opinion of Messrs. Read, Hoyt & Washburn of New York City, that the bonds are valid and binding obligations of the City of Richmond, and that the city has power to levy taxes on the taxable real property thereto for the payment of such obligations without limitation of rate or amount.

The bonds will be prepared under the supervision of the Liberty National Bank and Trust Company in New York, which will certify as to the genuineness of the signatures of the City Officials and the seal impressed thereon.

These bonds are legal investments for savings banks and trust funds in New York.

W. C. CARPENTER,
Chairman Committee on Finance.

Bids close June 2, 1930.

Highway Bridge

Norfolk, Virginia.

Sealed proposals will be received at the office of the Director of Public Works, City of Norfolk, until 12 o'clock noon, June 2nd, 1930, for the construction of a highway bridge across the northerly arm of Lafayette River between Granby Street and Lakewood. The contract will include approximately

250 piles
140 tons steel work
500 yards of concrete
40 M. feet of lumber

Plans and specifications, together with proposal, contract and bond forms, may be had at the above office on May 20th upon deposit of \$10.00, one-half of which will be refunded upon return of plans and forms within ten days after bid date.

Each bid must be accompanied by a proposal bond or a certified check, payable to B. Gray Tunstall, City Treasurer, in the sum of \$3000.00. Out-of-town bidders should submit data as to their equipment and ability to perform the work.

The City of Norfolk reserves the right to reject any or all bids and to accept any proposal which is considered to serve the best interest and secure the greatest advantage to the city.

WALTER H. TAYLOR, 3RD.
Director of Public Works.

Bids close June 3, 1930.

Maryland Highway Work

DEPARTMENT OF PUBLIC WORKS
STATE OF MARYLAND
STATE ROADS COMMISSION

NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for building slab bridge as follows:
Talbot County, Contract No. T-37-25—Concrete slab bridge required over Norwick Creek under the Pennsylvania Railroad Bridge at Queen Anne.

Will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Streets, Baltimore, Maryland, until 12 M., E. S. T., on the 3rd day of June, 1930, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans, will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted. No bids will be received unless accom-

panied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 20th day of May, 1930.

G. CLINTON UHL, Chairman.
L. H. STEUART, Secretary.

Bids close June 3, 1930.

Maryland Highway Work

DEPARTMENT OF PUBLIC WORKS
STATE OF MARYLAND
STATE ROADS COMMISSION

NOTICE TO CONTRACTORS

Baltimore, Md.

SEALED PROPOSALS for building seven sections of State Highway as follows:

Baltimore County, Cont. No. B-131-44—One section of State Highway from the end of concrete east of Monkton to Shepherd, a distance of 1.4 miles (concrete). Charles County, Cont. No. Ch-84-82—One section of State Highway from Hughesville toward Burnt Store, a distance of 1.5 miles (gravel).

Harford County, Cont. No. H-77-43—Fed. Aid Project 141-B—One section of State Highway from Aberdeen to Swan Creek, a distance of 1.77 miles (concrete).

Howard County, Cont. No. Ho-77-52—One section of State Highway along the Old Frederick Road from Wheelwright's gate to St. John's Lane, a distance of 1.2 miles (concrete).

Prince George's County, Cont. No. P-115-32—One section of State Highway along Central Avenue, in Berwyn, from the Baltimore-Washington Blvd. to the Edmondson Road, a distance of 1.5 miles (concrete).

Somerset County, Cont. No. S-43-111—One section of State Highway from Crisfield to Marlow, a distance of 6.72 miles (concrete shoulders).

St. Mary's County, Cont. No. SM-65-84—One section of State Highway along the Chaptico-Clements Road from the end of Contract No. SM-35 to the beginning of Contract No. SM-44, a distance of 2.1 miles (gravel).

Will be received by the State Roads Commission at its offices, Federal Reserve Bank Building, Calvert and Lexington Streets, Baltimore, Maryland, until 12 M., E. S. T., on the 3rd day of June, 1930, at which time and place they will be publicly opened and read.

Bids must be made upon the blank proposal form which, with specifications and plans, will be furnished by the Commission upon application and cash payment of \$1.00, as hereafter no charges will be permitted.

No bids will be received unless accompanied by a certified check for the sum of Five Hundred (\$500) Dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts.

The Commission reserves the right to reject any and all bids.

BY ORDER of the State Roads Commission this 20th day of May, 1930.

G. CLINTON UHL, Chairman.
L. H. STEUART, Secretary.

Bids close June 10, 1930.

Storm Sewer

Port Arthur, Texas.

Sealed proposals addressed to the City Commission of Port Arthur, Texas, will be received at the office of the City Clerk until 10 A. M., June 10, 1930, and at that time publicly read, for furnishing all necessary materials, equipment and labor necessary to construct the Thomas Boulevard Storm Sewer.

The principal approximate quantities are as follows:

2,902 feet 72-inch reinforced concrete pipe.
314 feet 36-inch reinforced concrete pipe.
414 feet 30-inch reinforced concrete pipe.
3,484 feet 24-inch reinforced concrete pipe.
6,728 feet reinforced concrete culverts, sizes 6 ft. by 7 ft. to 9 ft. by 12 ft.
16,478 cubic yards excavation.
13,676 cubic yards backfill.

Each bid must be accompanied by a certified check (payable to the City of Port Arthur, Texas), for an amount equal to 5% of the total bid.

Plans and specifications are on file in the office of the City Clerk at the City Hall, Port Arthur, Texas. Copies may be secured from the City Engineer at the City Hall at a cost of \$15.00, which will not be returned.

The City of Port Arthur, Texas, reserves the right to reject any or all bids.

J. W. O'NEAL, Mayor.
F. H. DRUNAGEL, Commissioner.
C. B. MOORE, Commissioner.
J. C. HAMILTON, City Clerk.
W. O. BOWER, City Engineer.

CLASSIFIED OPPORTUNITIES

MINERAL AND TIMBER LANDS, WATER POWER, MISCELLANEOUS PROPERTIES**COAL, IRON ORE, TIMBER**

20,000 acres, Southern Tennessee. Only five dollars an acre in fee. Box 103, Lake Jovita, Florida.

FOR SALE—Factory Sites, City Property, Water Frontage, Tracts for Suburban Development, Timber Lands and Colonizing Lands. H. H. Wefel, Jr., Mobile, Alabama.

GRANITE QUARRY

FOR SALE OR LEASE—Splendid granite quarry near Lithonia and Atlanta, Georgia. Address "Granite," Box 32, Station C, Atlanta, Georgia.

SAND DEPOSIT

FOR SALE—450 acres Concrete Sand, 200 acres Glass and Asphalt Sand, located on railroad, with sidetracks on property. Convenient to supply Georgia Highway, construction, several contracts now being let. Prospects excellent for a big output for several years. Will show a good profit as an investment or for operation. For further information regarding property and sale of same, address

J. D. VAUGHAN, Lumber City, Ga.

Rates, Terms and Conditions

RATES: 30 cents a line each insertion. Minimum space accepted, four lines. In estimating the cost allow six or seven words of ordinary length to a line. When the advertisement contains a number of long words proper allowance should be made.

Rates for Special Contract:
100 lines 25c a line
300 lines 26c a line
500 lines or more 25c a line

TERMS: For transient advertising cash with order; check, postoffice or express money order or stamp accepted.

On special contract advertising bills are rendered monthly, covering space used each month, payable within ten days.

CONDITIONS: No patent medicine, oil or mining stock advertisements or questionable or undesirable advertisements will be accepted. The assistance of our readers in excluding undesirable advertisements is requested. No display type used.

MINERAL AND TIMBER LANDS, WATER POWER, MISCELLANEOUS PROPERTIES**MANGANESE DEPOSIT**

MANGANESE: For sale that has been estimated over two million tons of high grade manganese by several competent engineers, will average better than 50% manganese. Several hundred acres in tract. H. G. Love, Hendersonville, N. C.

MANGANESE—NEAR RAILROAD AND RIVER, IN ROCKINGHAM CO., VA.: 260 ACRES HIGH-GRADE ORE. HAS YIELDED 6000 TONS THE ACRE. ADJACENT LAND ALSO YIELDS ORE. FOR DESCRIPTION AND TERMS WRITE A. L. HARNSBERGER, MT. AIRY, MD.

PHOSPHATE ROCK PROPERTY

PHOSPHATE ROCK PROPERTY in Tennessee For Sale—1500 acres containing approximately 3,000,000 tons brown rock and 3,000,000 tons blue rock; also plant complete for mining, washing, drying and grinding rock; 4000 tons storage shed; plenty water for washing rock. N. & C. & St. Louis R. R. siding. Sold cheap. Care FRED. G. BUSHOLD, Clegg Bldg., Lawrence, Mass.

FARM, FRUIT AND TRUCK LANDS

FLORIDA

IF YOU WISH thirty-five thousand acres of Florida land suitable for tung trees at \$3.50 per acre write JOHN WEHR, Realtor, Clermont, Florida.

11,000 ACRES cleared land; ready for tractor; plant Tung Oil trees; big profit. Northeastern Florida. Price \$5 acre. Terms. Address 176 N. W. 28th St., Miami, Fla.

LOUISIANA

ST. CHARLES PARISH, LOUISIANA, offers opportunities in cattle ranches, agricultural and industrial sites. St. Charles Bank & Trust Co., Sellers, La.

MARYLAND

TWO FINE APPLE ORCHARDS near Cumberland, Md.; 17 years old; 70 acres with 1500 trees and 1000 acres with 8000 trees, on hard road. Priced to sell. Address No. 9012, care Manufacturers Record.

SOUTH CAROLINA

5500 ACRE FARM, 75 buildings, stock equipment; a profitable enterprise in South Carolina to be sold to settle estate. Excellent crop records on tobacco, asparagus, grain, cotton. R. R. station on property; valuable timber; \$20 an acre, with liberal terms to responsible purchaser. No. 9007, care of Manufacturers Record, Baltimore.

ISLAND FOR SALE.

Bull Island, on Calibogue Sound, South Carolina coast. Four thousand acres, one thousand cleared. Duck pond, artesian wells. Plenty of quail and other game. Several beautiful old antebellum home sites. High bluff. Deep water.

J. W. BARNES,
Mendel Building,
Savannah, Georgia.

TEXAS

RIO GRANDE VALLEY—10-acre citrus grove, paying 20 per cent on valuation; modern home. Write for details and pictures. A. V. BROWN, Harlingen, Tex.

VIRGINIA

FOR SALE—195 acres tobacco, wheat, alfalfa, corn; plenty of game, turkey, deer, quail. Dwelling near highway. Terms easy. A. F. M. SMITH, Wingina, Virginia.

RIVER FARM FOR SALE OR EXCHANGE—750 acres, brick mansion, two stock barns, several tenant houses, 125 acres rich bottom land, 325 acres fine upland, 300 acres timber. Good neighborhood. Low price. GEO. V. VENABLE & CO., Lynchburg, Va.

SOUTHERN HOMES

OVER 500 ACRES, spring, brook, log cabin, many long leaf pines. Estate preserve. Fine fish pond "full of fish." Low acreage price. G. F. ARCHER, Aiken, S. C.

SOUTHERN HOMES

in the best city in the Carolinas. \$10,000 to \$75,000, according to size and location.
F. C. ABBOTT & CO.,
Charlotte, N. C.
32 years in Charlotte Real Estate.

BEST BUY IN FLORIDA.

Most beautiful residence in Ft. Myers; 200-ft. waterfront, as well as the same frontage on First Street, the most beautiful street in Florida. This sacrificial price due to death of owner. Price \$38,000.00. Terms if desired.

P. JOHN HART REALTY CORP.,
P. O. Arcade,
Fort Myers, Fla.

A BEAUTIFUL ESTATE AND GROVE In the famous Indian River section, near Vero Beach, and only 700 feet off Miami-Jacksonville Highway, private paved road leading to this 20-acre estate. Large 8-room furnished home overlooking town, $\frac{1}{4}$ mile to school, church, post office, stores and station. Variety choice fruits and flowers. Only 3 miles to Ocean Beach by auto. Fresh and salt water fishing, and hunting second to none. This property a pickup at \$10,500. C. C. BRASWELL, 528 S. W. 14th Ave., Miami, Fla.

HUNTING PRESERVE

MASSACHUSETTS

FOR SALE—700 acres cut-over timber land in western Mass. Suitable for hunting club. Five hours' drive from New York City. A. P. ACKERMAN, P. O. Box 245, Hackensack, N. J.

BUSINESS AND INVESTMENT PROPERTIES

FOR SALE—Satsuma Beach, 8 miles from the Gulf, a nice quiet place to spend the hot summer days, clear salt water, nice cottages, 1850 feet water front. Good investment. Carl A. SWANSTROM, Summerdale, Alabama.

BUSINESS OPPORTUNITIES

FOR SALE—To right party profitable hamper and veneer mill. Located in Florida. Plenty of timber available. Address No. 8081, care Manufacturers Record.

LONG TERM LOANS, large amounts, made on industrial, mercantile, sawmill properties. THOS. W. GILMER, Attorney, Bay Minette, Alabama.

MANUFACTURERS—Write for our FREE Classification Sheets of inventions for sale, covering 135 main subjects, and in one or more of which you will doubtless be interested. ADAM FISHER MFG. CO., 578 Enright, St. Louis, Mo.

FOR SALE BY OWNER, either in whole or in part, complete luggage factory, portable phonographs, folding card tables, wooden novelties and patented Jimmie Jumpers. We are willing to sell either business or to carry on, providing we could sell one-half interest. PETERSBURG LUGGAGE CO., INC., Petersburg, Va.

THE OWNER of an established business, located just outside the limits of a Southern city of 150,000 population, connected with two trunk lines, desires a partner to take full charge, or will sell at a bargain. Now manufacturing mine and marble mill equipment, foundry capacity castings up to 16 tons, general machine and steel work. Machinery all modern and electric driven with our own Diesel plant. Address No. 9008, care of Manufacturers Record.

WE WISH to communicate and hear from desirable parties that wish to join other parties with experience and reputation that will be of national value and worth in completing organization of construction Co., properly financed to handle large operations. Parties desiring further details that wish to purchase 10 or more shares of the stock, and in other ways be of value to such organization, will please communicate with No. 9013, care of Manufacturers Record. Do not reply unless interested as above.

FOR SALE—Bottling plant in Virginia. Brick and concrete building, 3 floors. R. R. siding. \$25,000.00 stock. Mfg. goods and raw material. Machinery, equipment, etc. Probably the best plant in the South. Do shipping and local truck business. A wonderful opportunity for some one who wants to get into the bottling line to get a well-established and going business making a ginger ale that has been on the market for the past 20 years (name copyrighted) and has been extensively advertised through the Southeast and as far north as Pittsburgh. Also have franchise for some nationally advertised drinks. Because of disagreement among the stockholders will be sold far below its actual value. Might consider taking other property in part payment. For full particulars write J. G. BUSTON, Tazewell, Va.

INDUSTRIAL SURVEYS

ENGINEERING REPORTS on resources of cities and towns. Recommendations for industrial development and zoning made by specialists in locating industries.

TECHNICAL SERVICE CO.,
Woolworth Building
New York City

FINANCIAL

MONEY WANTED
6, 7 and 8% Mortgage Loans on City, Town or County property. Southern Land & Investment Co., Baton Rouge, Louisiana.

DEVELOPING AND ENGINEERING

ORGANIZING—DEVELOPING—
ENGINEERING

Engineering firm, widely experienced in investigating, organizing, developing, designing and supervising construction, solicit correspondence regarding development or extension of meritorious projects and existing industries, power plants and utilities. Address No. 8016, care Manufacturers Record.

INDUSTRIES WANTED

TOWN OF FRONT ROYAL, VA., wants large and small users of electric current. Attractive price and for a term of years. Write J. L. DICKINSON, Mayor.

RIGHT AT THE SOURCE of raw materials and with loyal, native, alert labor, SUMTER, SOUTH CAROLINA, affords exceptional opportunities for PROFITABLE manufacturing of furniture, toys and wood novelties. Fourteen such factories already located here. Also splendid openings for hosiery, silk and knitting mills. Certain valuable inducements to new industries. For information write Sumter Board of Trade.

INDUSTRIAL PLANTS

FOR SALE—Manufacturing Plant of going concern. Need money for operating purposes. Will sign ten years' guaranteed lease at attractive rental. For full particulars address No. 8092, care of Manufacturers Record, Baltimore, Md.

FOR SALE—MANUFACTURING PLANTS—Operating refrigerator manufacturing plant and patents, making large capacity machines for hotels, stores. Million dollar sales, excellent earnings; owner sick; agencies in all States. Address No. 9009, care of Manufacturers Record, Baltimore.

COMPLETE WOODWORKING PLANT, suitable for furniture or other wood articles. Dry kiln, side track, with ample trained labor available. Can be bought for less than one-half reproduction value. First Securities Company, Chattanooga, Tenn.

WATER FRONT PROPERTY

FOR SALE—Water-front property located in the City of Suffolk, Virginia. This property is suitable for manufacturing purposes, as it is served by six railroads and deep water to the sea. DIXIE GUANO COMPANY, INC., Suffolk, Va.

FACTORY SITES

FOR SALE—Finest industrial location to be found in entire South; consists of 114 acres, outskirts of thriving industrial city of Northeast Alabama. Spring on property flowing 2 million gallons water daily. Railroad; 10-inch city water main; light and power line crosses the property. For full particulars write FISHER REALTY COMPANY, Gadsden, Alabama.

FACTORY SITE

ON DEEP WATER

If you are seeking an ideal deep water industrial location in Baltimore, Maryland, on one of the finest harbors in the world, see full page advertisement on page 91, May 15th issue of the Manufacturers Record.

W. S. CAHILL CO.,
Key Highway and Webster Street,
Baltimore, Md.

FACTORY BUILDINGS

FACTORY BUILDING, 50x192, 3-story cement construction, on L. & N. Railroad and power line, must be sold. Write CARL A. SWANSTROM, Summerdale, Ala.

FOR SALE OR LEASE IN NEWPORT NEWS, VA., a solid block of reinforced concrete and brick buildings, floor space about 75,000 sq. ft. Buildings are new, with railroad siding and power plant, right in the heart of the city. Can be used for manufacture of furniture, machinery, etc. Will sell or lease at reasonable price. Apply L. U. NOLAND, Newport News, Va.

PATENT ATTORNEYS

FREE "PATENT PARTICULARS"
Sterling Buck, over 23 years Registered Patent Attorney. Prompt and thorough services. Suite M 629 N. Washington, D. C.

PATENTS—Booklet free. Highest references. Best results. Promptness assured. WATSON E. COLEMAN, Patent Lawyer, 724 Ninth St., N. W., Washington, D. C.

SEYMOUR & BRIGHT, Registered Patent Attorneys. Established 1876. PATENTS. TRADEMARKS, COPYRIGHTS. Prompt and thorough service. Suite 600-4, Barrister Building, Washington, D. C.

PATENTS—TRADEMARKS—COPYRIGHTS Charlotte office convenient to South. PAUL B. EATON, Registered Patent Attorney, 218 Johnson Building, Charlotte, N. C., and 314 McLachlen Building, Washington, D. C.

EDWARD C. SASNETT, Atty. at Law, formerly a Principal Examiner in the U. S. Patent Office. I offer to inventors and manufacturers a strictly personal service based on twenty years' experience in patent work. McGill Building, Washington, D. C.

REPRESENTATIVES WANTED

WANTED—Representative acquainted with Architects and Contractors—especially Plastering Contractors—part time, on commission basis, to keep us informed of jobs coming up in your city requiring plaster ornament. Have attractive proposition. Write for particulars. LOUISVILLE COMPOSITION PRODUCTS CO., Louisville, Ky.

SALESMAN to sell boiler compound. Must have his own car and understand steam boiler operations. In replying, please state present connection, if any experience, etc. Straight commission basis our method of payment. SOUTHERN PRODUCTS CORPORATION, 520 Elysian Fields Ave., New Orleans, La.

AGENCIES WANTED

WANTED TO REPRESENT on commission basis manufacturers of Cement, Iron, Steel, Wallboard, Lime, other building materials, or as distributor, with warehouse facilities. P. O. Box 1046, Beaumont, Texas.

SITUATIONS WANTED

SUPERINTENDENT for boiler and tank fabricating shop. Strictly sober and first-class practical man. Can hold down overhead and get production. Address No. 9010, care of Manufacturers Record.

WANTED—A high-class, reliable man with extensive sales ability and \$10,000 to invest in a corporation now ready to launch a product with unusual possibilities which will cause a sensation when it is submitted to the public. References required. Salary and bonus. Address 9003, care Manufacturers Record, Baltimore, Md.

SITUATIONS WANTED

EXECUTIVE, age 39, 20 years' experience accounting, cost accounting and production, office manager, credits and collections, purchasing, selling. 14 years in official capacity as secretary and treasurer. Satisfactory reasons for desiring change. Available August 1st or before if necessary. Address No. 9011, care of Manufacturers Record.

MEN WANTED

IF YOU ARE OPEN to overtures for new connection and qualified for a salary between \$2500 and \$25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service, of recognized standards and reputation, through which preliminaries are negotiated confidentially for positions of the caliber indicated. The procedure is individualized to each client's personal requirements, your identity covered and present position protected. Established twenty years. Send only name and address for details.

R. W. BIXBY, INC.,
103 Downtown Bldg., Buffalo, New York

MACHINE AND FOUNDRY WORK

ONE OF BEST equipped machine shops in South, including modern foundry, now in position to accept outside work. Large factory located junction three railroads. Competent, experienced personnel. Reasonable rates. Prompt reply to inquiries. Address Box 748, Lynchburg, Virginia.

MACHINERY AND SUPPLIES

FOR SALE—Two 3-inch Buffalo Centrifugal pumps in good shape, complete with base and one 10 H.P. motor, capacity 300 gallon 70 ft. head. Right-hand drive, motor 3 phase, 220 volt. Beaufort Bottling Works, Inc., Washington, North Carolina.

RESALE DEPARTMENT

MACHINERY

EQUIPMENT

SUPPLIES

WANTED
BLUE PRINTING MACHINE

Wanted—Used forty-two inch number twenty model Peerless Pease or equal blue printing, washing and drying machine.

THE INGALLS IRON WORKS COMPANY
Birmingham, Alabama

REVOLVATORS
For Sale

New and rebuilt portable elevators (stackers), hand or electric power, any size and capacity.

Address P. O. Box 1844
Atlanta, Ga.

BOILERS

2-300 H.P. Heine Water Tube—A.S.M.E. 160 lbs.
1-80 H.P. Erie City Economic Type—A.S.M.E.
125-lbs.

Stacks from 30" to 50" diameter
Get Our Prices

M. J. HUNT'S SONS
1620 N. Delaware Ave., Phila., Pa.

If you want to get
SOUTHERN business
advertise in the
MANUFACTURERS RECORD
BALTIMORE, MD.

FOR SALE

1—McEwen H.R.T. Boiler, 200 horse power, 100 lbs. pressure; never used; price \$350.00 f.o.b. case, Bristol, Va., also two 100 horse power Erie City boilers at \$250.00 each f.o.b. Bristol, Va., can be inspected our yard at foot of Mary St.

For details write
Nashville Industrial Corp.
Old Hickory, Tennessee

AIR COMPRESSORS

500 cu. ft. Ingersoll Rand, Class XRB, 13" and 8" x 12" Duplex, Two Stage, Belt Driven; with Idler for short belt drive. This compressor is three years old, has been used less than one year and is as good as new in every respect.
1050 cu. ft. Worthington 18" and 11" x 14" Duplex, Two Stage, Feather Valve; with Idler for short belt drive. Rebuilt and guaranteed in first class condition.

LATHE

21" x 11" LeBlond Heavy Duty, Gear Head, Single Pulley Drive.
19" x 14" LeBlond Heavy Duty, Geared Head, Motor Drive with motor. Rebuilt and guaranteed in first class condition.

MOTOR

150 H.P. Fairbanks Morse Slip Ring, Type HB, Roller Bearing, 3 phase, 60 cycle, 440 volt, 600 R.P.M. Guaranteed free of all electrical and mechanical defects for one year.

PUNCH & SHEAR

No. 16 Pels Combined Punch, Slitting Shear, Bar, Angle and Tee Cutter. Rebuilt and guaranteed in first class condition.

BRAKE

No. 6062 Dries & Krump, capacity 6t—No. 16 gauge. Used less than one year. Good as new.

DELTA EQUIPMENT COMPANY
148 N. Third Street Philadelphia, Pa.

NEW AIR TOOLS AT 60%

13 size B, "Thor" air motor metal drills
(Cap. up to 2")
48 size C "Thor" air motor metal drills
20 size 42 "Thor" air motor metal drills
9 size — "Thor" air motor metal drills
(Cap. up to 9/16")
11 size BW "Thor" air motor metal drills
(Cap. up to 2")
15 size 8 "Thor" air motor close corner metal drills.
14 4X "Little Giant" air motor metal drills.
12 2X "Little Giant" air motor metal drills.
50 No. 69 "Keller Master" riveting hammers, also several other makes and sizes.

These are absolutely brand new tools on which we will save you 40%.

W. M. SMITH & COMPANY
Box 1709
Birmingham, Ala.

CRUSHING ROLLS

36" x 16"

Also a full list of drying, grinding, pulverizing and other mining machinery. Send us your inquiries.

HEINEKEN ENGINEERING CORPORATION
31 Nassau St. New York
Tel. Hitchcock 4378-9



The ELECTRIC SERVICE CO. Inc.
America's Used Transformer Clearing House
212 Walnut Street Cincinnati, Ohio



TRANSFORMERS

We Carry a stock of approximately 5000 transformers of a total capacity of about 100,000 kva., in sizes from 1 to 1000 kva. and from 110 volts to 66,000 volts.

We specialize in the rewinding and repair of transformers, any size and any specifications. All work positively the best and guaranteed as such. We will show you a saving of from 30% to 60% of the cost of new transformers!

Send for our monthly bulletin, showing complete lists of transformers on hand, and our prices for rewinding transformers.

WE BUY MODERN TYPE TRANSFORMERS—ANY SIZE—ANY QUANTITY

BOILERS

2—500 H. P. Heine Water Tube, 160 lbs. Pressure, A. S. M. E. code.
2—180 H. P. Keeler water tube, 200 lbs. Pressure, A. S. M. E. Code.
1—150 H. P. 72" x 18' Hor. Ret. Tubular, 150 lb. pressure, A. S. M. E. code.

GENERATOR SETS

2—50 KVA 220 volt, 3 phase, 60 cycle Ridgway Generators, direct connected to Ridgway Engines.

METAL WORKING TOOLS

1—8' Geo. Ohl bending brake, press type, 10 gauge capacity.
1—8' Covington power squaring shear, 18" gap, $\frac{1}{4}$ " capacity.
20" x 20' Lodge & Shipley engine lathe, belt drive, quick change.
19" x 8' Sidney heavy duty, belt drive, quick change.
25' Hilles & Jones bending roll, $\frac{1}{2}$ " cap., motor drive.
No. 4 36" Hilles & Jones punch and shear, cap $1\frac{1}{4}$ " x 1", belt drive.
10"-12" Dill slotted, belt drive, dia. of table 24".

THE O'BRIEN MACHINERY CO.

113 North Third Street

Philadelphia, Pa.

IF IT'S NEW PIPE OR SECOND HAND

black or galvanized up to 12"—we have it. Cut and threaded to any length. **SPECIAL:** a carload of 3" or 4". Cheap at any time, rethreaded and coupled.

Your inquiry means—Another satisfied customer.

HUDSON PIPE AND SUPPLY COMPANY
34th Street and C. R. R. of N. J. Bayonne, N. J.

YOU may replace certain machinery in your plant this year. Let us help you sell the equipment you will no longer need by advertising it in

THE RESALE DEPARTMENT
Manufacturers Record Baltimore, Md.

IRON AND STEEL PIPE

Large quantity new and used Government material in excellent condition, ready for immediate shipment. Low prices.

CENTRAL PIPE & SUPPLY CO.
Box 1099 Charleston, W. Va.

TANK CAR TANKS

150-10,000 Gal. 150-12,000 Gal.
Many others of various capacities.
Cleaned, Tested, painted, Guaranteed.

ZELNICKER IN ST. LOUIS

Rails, Equipment, Machinery, Steel Piling,
Oil Engines, Tanks, etc.

Send for 60 page Bulletin of Bargains.

STEAM DRYER BARGAINS

10—Bartlett & Snow Steam Jacketed Agitated Reducing Kettles or Steam Dryers, 10' dia. x 3' deep.
In excellent condition.

Address A-471

Care of Manufacturers Record, Baltimore, Md.

8" Galvanized Corrugated Pipe

6000 ft. 8" NEW GALVANIZED CORRUGATED pipe in lengths 16 to 20 ft. suitable for exhaust drains, water systems, sewers, etc. Have the necessary connecting sleeves. Price considerably under the market.

2000 ft. 12" Naylor black asphalted spiral welded slip joint pipe, slightly used.

MARINE METAL & SUPPLY CO.
167 South Street New York City

Second Hand
and New
Wrought Iron **PIPE** Overhauled
Rethreaded
and Coupled

Also Cut to Sketch

Greenpoint Iron & Pipe Co., Inc.
187-197 Maspeth Ave. Brooklyn, N. Y.

CAST IRON PIPE

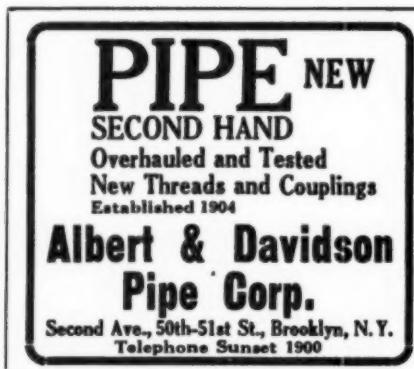
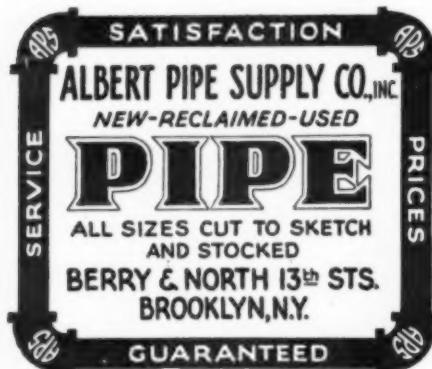
Approximately 10,000 feet 10" class B cast iron, bell and spigot water main in 12 ft. lengths. Good as new. Priced very low for immediate shipment. Located Clinchfield, Va.

Nashville Industrial Corp.
Old Hickory, Tennessee

IDLE MACHINERY

Can be
Disposed of
by
Advertising
it in the

Manufacturers Record
Baltimore, Md.



PIPE

Rethreaded, reconditioned, guaranteed, suitable for all practical purposes, furnished with new threads and couplings, 400,000 feet in all sizes from 24" to $\frac{1}{4}$ ".

Also large stock of spiral pipe, sizes 7", 10", 12", 14", 20" and 24".

Large stock of valves and fittings, screwed and flanged. Can make attractive prices.

MARINE METAL & SUPPLY CO.
167 South St., New York City

It pays to buy Gregory Hi-Grade-Rebuilt Motors

For over 36 years well-informed buyers have profited by that fact. Gregory Hi-Grade-Rebuilt Motors do everything that a new motor can do: last as long; look as good; and better still—cost much less.

Why buy new motors? Try Gregory Hi-Grade-Rebuilt and Save Money. They are shipped on approval.

Send for our 80-page Illustrated Monthly Bargain Sheet.

Gregory Electric Company
Lincoln and 16th Street-Chicago

TRANSFORMERS AND MOTORS

2 Transformers, rated H-60-32.
2—140-20-V.

2 Transformers, rated H-60-37.
Motors from $\frac{1}{4}$ HP up in stock for immediate delivery.

THE OSBORNE & SEXTON MACHY. CO.
Columbus, Ohio

1500 HP !!

2—1500 HP, 514 RPM, 3 Phase, 60 Cycle, 2450 Volt, General Electric, Type I, Form M, NEW slip ring motors—in original factory crates.

—PRICED TO SELL—

Send for complete stock list Bulletin No. 37.

ROCKFORD POWER MACHINERY CO.
620-626 Sixth St. Rockford, Ill.

FOR SALE

750 K.V.A. Skinner Engine Co. "UNIVERSAL-UNAFLOW" Steam Generator Unit

3 ph. 60 cy. 240/480 V. Gen. El. Generator, 140 lbs. Steam, 5 lbs. Back Pressure, Belted Exciter and Switchboards.

Installed New 1927
In perfect condition

For Price and Particulars
Apply to

JOHN D. CRAWBUCK COMPANY
Empire Bldg. Pittsburgh, Pa.

10,000 KVA Turbo typical of 4 units recently delivered and similar to the following.

PRACTICALLY NEW 100% INTERNAL EXCELLENCE WESTINGHOUSE CONDENSING TURBO UNITS COMPLETE—INSTANT SHIPMENT

| | | |
|--------------|--------|----------------|
| 1—15,000 KW | CW-218 | Frame—1800 RPM |
| 1—10,000 KVA | CW-188 | Frame—1800 RPM |
| 1—5,500 KW | CW- 78 | Frame—1800 RPM |
| 1—5,500 KVA | CW- 78 | Frame—3600 RPM |
| 1—4,000 KVA | CW- 78 | Frame—3600 RPM |
| 2—1,700 KVA | CW- 26 | Frame—3600 RPM |
| 1—1,500 KVA | CW- 16 | Frame—3600 RPM |

(3 phase, 60 cycle, standard voltages)

A.S.M.E. CODE DESIGN BOILERS 200-225 IBS.

2—1500 H.P. Cross Drum B & W
2—2650 HP Ladd Bent Tube
5—627 HP Stirling Plant, modern stokers, auxiliaries
8—504 HP B & W Vertical Steel headers, et al.

CONDENSERS MOTOR GENERATOR SETS

Verification and proof of new equivalent condition easily reached on personal inspection
50% to 200% saving on investment

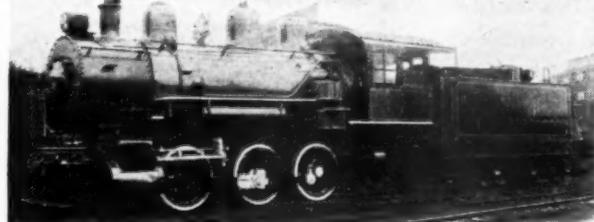
Send us list of your requirements—or what you have for sale

COME TO CINCINNATI

PAUL STEWART and COMPANY
POWER PLANT EQUIPMENT

RAILROAD AND CONTRACTORS' EQUIPMENT

FOR SALE



75-ton, American Loco Co., 20x26", 6-driver switcher, 44" wheel centers; 11' wheel base, 260 pound pressure; tractive power 36000 pounds; air brakes, cross-compound pump; power reverse; 5000 gallon tank; steel cab; steel tender frame; completely overhauled. I.C.C. full time. ENTIRELY NEW A.S.M.E. and OHIO BOILER IN 1923.

WE HAVE OVER FORTY LOCOMOTIVES OVERHAULED AND READY; ALL TYPES, SADDLE TANKS AND WITH SEPARATE TENDERS, 5 TO 100 TONS; ALSO DUMP CARS, STEAM AND GASOLINE CRANES AND SHOVELS, ETC.

SOUTHERN IRON & EQUIPMENT CO. (Est. 1889) ATLANTA, GA.

RELAYING RAIL

| | |
|-----------------|-----------------|
| 5 Miles 30-lb. | 20 Miles 70-lb. |
| 10 Miles 40-lb. | 5 Miles 75-lb. |
| 5 Miles 50-lb. | 10 Miles 80-lb. |
| 10 Miles 60-lb. | 3 Miles 90-lb. |

Also other sections for southern delivery

WELLER & COMPANY
NEW AND RELAYING RAIL
BIRMINGHAM ALABAMA

RAILROAD and CONTRACTORS EQUIPMENT

10 Standard and 36" Gauge Modern Direct-connected Locomotives, in all types and weights from 8 to 75 tons.
10 Standard and 36" Gauge Geared Locomotives, all weights.
15 Steam Shovels and Locomotive Cranes of different types and sizes.
3000 Tons Relaying Rails, all sizes, on our Birmingham yards.
100 Sets 35 and 40-lb. Frogs and Switches; good as new.
Tie plates, track spikes and track bolts, immediate shipment from Birmingham stock.

Your inquiries will receive careful and prompt attention

BIRMINGHAM RAIL & LOCOMOTIVE CO., Birmingham, Ala.

SHOVELS or CRANES For Sale or Rent

Rental payments may apply on purchase

1—Model 105 Northwest gasoline shovel 1 cu. yd. capacity in good operating and mechanical condition. A real bargain. Located in Central Tennessee.

1—30-B Bucyrus steam dragline on caterpillars equipped with 35-ft. boom, 1 cu. yd. bucket. Machine in excellent condition, priced for quick sale. Located near Chattanooga, Tenn.

1—Erie Type B steamer, 1 cu. yd. dipper. This machine is in splendid condition and is reasonably priced. Located in Central Tenn.

1—Insley Combination Clamshell and back hoe $\frac{1}{2}$ cu. yd. capacity, gasoline power. In good operating condition. This machine is a real bargain. Located in Southern Tenn.

We have both Steam and Gasoline Excavators ranging from $\frac{1}{2}$ to $1\frac{1}{2}$ cu. yd. capacity in various parts of the country that will be sold at extremely low prices or leased with leased payments made applying on purchase price.

Charles F. Cohen
Lima Trust Bldg., LIMA, OHIO

Wire or Phone at My Expense
Telephone Main 4824

All This Equipment Is Located at Sweetwater, Tenn.

STEEL TANKS—Blue Prints or Details on Request

| Quan. | Diam. | Height or Length | Size | Quan. | Diam. | Height or Length | |
|-------|--------|------------------|----------|-------|--------|------------------|------------------|
| 5 | 10'-0" | 11'-0" | Vertical | 1 | 10'-0" | 8'-0" | " |
| 2 | 10'-0" | 11'-0" | " | 1 | 12'-0" | 6'-0" | Vertical |
| 5 | 9'-0" | 10'-0" | " | 1 | 10'-0" | 6'-6" | " |
| 1 | 12'-0" | 5'-0" | " | 2 | 5'-0" | 17'-0" | Horizontal |
| 1 | 10'-0" | 11'-0" | " | 3 | 10'-0" | 12'-0" | Vert. with Cover |

1—9' x 12' x 12' Hopper 34' High

MISCELLANEOUS EQUIPMENT

- 2—Webb City & Carterville Foundry Jaw Crushers 14" x 8".
- 2—32" 4 Cage Mills.
- 2—Chain Bucket Elevators, height of each 35', buckets 9" x 5" x 6", buckets 9" centers.
- 1—11 x 16, No. 9795 Horizontal Chandler & Taylor Slide Valve Engines.
- 2—Bruckner Type Roasters, 8' diam. x 20'.

THE EQUIPMENT SALES CO., R. W. Storrs, Jr., Mgr., Richmond, Va.

BEARCATS, PAVERS, ROLLERS, HOISTS

Attractive bargains in used equipment for the road and building contractor.

- 2—27E Koehring Pavers.
- 1—21E Ransome Paver.
- 1—Case 10 Ton Roller.

H. O. Penn Machinery Co., Inc.
140th St. and East River, New York City

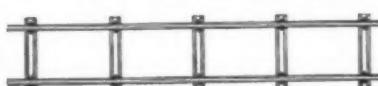
ELECTRIC HOISTS FOR SALE

Lidgerwood 80 HP double drum electric hoist with swiveler, 60 cycle, 3 phase, 220, 220 or 240. Solenoid brakes, brake bands on each end of drum, oversize drum. Practically new.

AMERICAN HDWE. & EQUIP. CO.
Charlotte, N. C.

Special FLORIDA price

36" GAUGE INDUSTRIAL TRACK



GASOLINE LOCOMOTIVES

- 15—Miles 36" gauge 25 lb. portable Industrial Track with 7 Riveted ties per 15 ft. section with slip joint tie and Fish plate Connections.
- 5—Whitcomb 8 ton, 36" Gauge gasoline Locomotives.

Priced low for direct shipment from present location in Florida.

EQUIPMENT CORP. OF AMERICA

1166 So. Washtenaw Ave.,
Chicago, Ill.

866 Horn Bldg., Philadelphia
666 Empire Bldg., Pittsburgh

FOR SALE OR RENT

2—Keystone Graders, Model No. 4.
1—10 ton Monarch 3 wheel Steam Roller.
1—5 ton Buffalo Tandem Steam Roller.
2—10 ton Buffalo Springfield Steam Rollers.
Large stock Rock Crushers, Screens and Elevators.

JOHNSON & HOEHLER
Fernwood, Del. Co. Pennsylvania

RELAYING RAILS—SWITCHES TRACK MATERIAL

THE PERRY BUXTON DOANE CO.
Pennsylvania Bldg. Philadelphia, Pa.

Contractors' Equipment

- 1—50 "B" Bucyrus, High Lift, Good Condition, New Cast Steel Underframe, Caterpillar Mounted.
- 1—^{"32"} Marion, 1 $\frac{1}{4}$ Yd. Guaranteed Rebuilt Condition.
- 1—Erie "B" $\frac{1}{4}$ Yd. Full Crawler, 2 Speed.
- 1—Air Compressor, Sullivan, 110' Portable.
- 1—Air Compressor, Sullivan, 220' Portable.
- 1—"21" Parsons Ditcher, Good Condition.

DEMPSTER EQUIPMENT COMPANY
KNOXVILLE, TENN. . . . TEL 2-4168
RENT — LEASE — SELL
SHOVELS — CRANES — LOCOMOTIVES —
CARS — AIR COMPRESSORS

RAILS NEW & RELAYING ALL WEIGHTS

Let us know your needs. We may have material in stock near you.

WE BUY RAILS FIT TO RE-LAY

ROBINSON & ORR

Columbia Bldg., 248 Fourth Ave., Pittsburgh, Pa.

New Frogs and Switches at low prices.

IMMEDIATE SHIPMENT

4000 tons of 85 lb. ASCE Open Hearth rail with angle bars. Attractive prices quoted. Wire or write for prices.

M. K. FRANK

220 East 42nd Street
New York City

Clark Building
Pittsburgh, Pa.

Familiarize yourself

with the

SOUTH'S progress

by reading the

MANUFACTURERS RECORD
BALTIMORE, MD.

Rebuilt and Reconditioned Excavators

For Sale, or Lease With
Option to Buy

Marion No. 32 1 Yard Steam Shovel on full crawlers. Ready for immediate delivery. An exceptional bargain, located at Pittsburgh.

P&H Model 204, $\frac{1}{4}$ yard Clamshell, 35 foot boom. Has been very carefully reconditioned. At Hoboken plant.

Theew 1 yard Steam Shovel, on wheels with 20 foot boom. Must move quick, no reasonable offer refused. At New York.

P&H Model 400 Dragline, $\frac{1}{2}$ yard, in good shape, ready to go. Located at Memphis.

Erie Gas-Air 1 yard Shovel. Looks and operates like new. At St. Louis.

P&H Model 206 $\frac{1}{2}$ yard Shovel. Thoroughly overhauled and in very good operating condition. At Hoboken plant.

LIBERAL TERMS

*Write or wire at our expense
if you do not see what you want*

EXCAVATING EXCLUSIVELY EQUIPMENT EXCAVATING DEALERS, INC. EQUIPMENT

Hoboken, N. J. 1706 Willow Ave. Berkeley, Cal. 2857 Ninth St.
West Allis, Wis. 5905 Greenfield Ave.
Los Angeles, Calif. 2248 E. 37th St. Chicago, Ill. 1040 W. Division St.

200 Tons

85 lb. A.S.C.E. RELAYING RAILS

HENRY LEVIS & COMPANY
Commercial Trust Bldg. Philadelphia

SHOVELS

- 1—LORAIN 75-A, GAS, 1 $\frac{1}{4}$ -yd., like new
- 1—NORTHWEST 104, GAS, 1 $\frac{1}{4}$ -yd., Nov. 1928
- 1—OSGOOD "Conqueror" GAS, new Jan. 1930.
- 1—ERIE GAS & AIR, 1 $\frac{1}{4}$ -yd., new 1928.
- 1—MARION, GAS-ELECTRIC, 1 $\frac{1}{4}$ -yd., 1928.
- 1—GENERAL, GAS, 1 $\frac{1}{4}$ -yd., new 1929.
- 3—ERIE B-2, STEAM, new 1929 and 1928.
- 2—MARION 32, STEAM, 1 $\frac{1}{2}$ -yd., 1930.

CRANES

- 1—40-ton cap. LINK-BELT, GAS, Dragline.
- 1—15-ton cap. NORTHWEST, new Oct. 1928.
- 1—12-ton cap. KOEHRING, 45' boom, 1927.
- 1—12-ton cap. NORTHWEST, used 5 mos.
- 1—6-ton BROWNING Truck-Crane, 1929.
- 1—25-ton BROWNING No. 8 Loco. Crane, 1927.

DUMP CARS

- 12—12-yd. WESTERN, Air Dump, Vertical cylinders, used 6 mos., like new.

GREY STEEL PRODUCTS COMPANY, Inc.
111 Broadway New York, N. Y.

The Davison Chemical Company

Manufacturers and Distributors of

All Grades of

SULPHURIC ACID SUPERPHOSPHATE DOUBLE SUPERPHOSPHATE

Main Plant, Baltimore: Pyrites Deposits Cienfuegos District, Cuba; Phosphate Rock Plant, Southern Phosphate Corporation, Bartow, Florida.

Fertilizer Plants: Maryland 11; Virginia 9; Pennsylvania 10; Georgia 2; Ohio 2; North Carolina 11; South Carolina, Mississippi, Louisiana, Texas, Indiana, West Virginia, Tennessee, Connecticut and New Jersey 1 each.

Main Office: Baltimore Trust Building, Baltimore

HIGH GRADE SPRINGS

In all metals and any quantity



Send sample or description for prices

Consult our Engineering Department on your spring problems.

RAYMOND MFG. CO. CORRY, PA.

Your ADVERTISEMENT

in these pages places your facilities before the leaders in manufacturing and industrial operations in the South and Southwest, creating wider markets for your products.

♦ ♦

Advertising rates gladly submitted upon request

♦ ♦

MANUFACTURERS RECORD
Baltimore Maryland

MUNDY HOISTS

Gasoline—Electric—Steam

Standard of the World

CAR PULLERS
CABLEWAYS

MUNDY
TRADE MARK
ESTABLISHED 1869

J. S. Mundy
Hoisting Engine Co.
Frelinghuysen Ave.
Newark, N. J.



Hayward Buckets

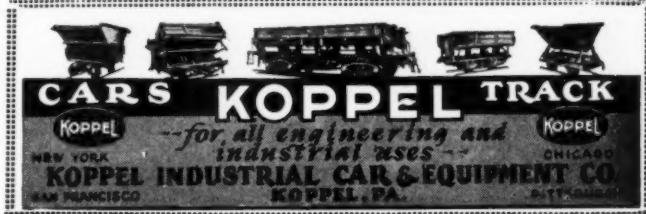
"Dig for all the World"
THE HAYWARD COMPANY
50-52 Church St., New York, N.Y.



INDUSTRIAL CAR EQUIPMENT



THE ATLAS CAR & MANUFACTURING CO.
Cleveland, Ohio



CATCHINITE
Roofs your Road

CATCHINITE, the Low Cost Improved Road construction, makes a waterproof, mudless, dustless and skidproof surface over your old or new macadam, top soil, sand clay, gravel or soil roads. CATCHINITE consists of combined treatments of tar and specially prepared asphalts. It has the benefits and advantages of hard surface pavements, but may be constructed for 1/6 the cost as nearly 90% of local materials are used.

*We would be pleased to help
solve your road problems.*

THE BITUMINOUS EARTH ROAD CORPORATION
Professional Bldg., Raleigh, N. C.

NOT A MINUTE'S DELAY



Jacking an Armco conduit under a busy Cleveland intersection

TRAFFIC of 26,000 vehicles daily plus that on three car lines sped overhead unhindered. There was no damaged pavement or settling fill to be maintained. Both the time and cost of construction were lowered. Similar advantages are common to any Armco jacking job. Further information on request.



ARMCO CULVERT MFRS. ASSOCIATION
Middletown, Ohio

Or these members

Dixie Culvert Mfg. Co. Western Metal Mfg. Co.
Little Rock, Ark. Houston, Texas

The Tennessee Metal Culvert Co. Louisiana Corr. Culvert Co.
Nashville, Tenn. Baton Rouge, La.
The Dixie Culvert & Metal Co.
Atlanta, Ga.

MANUFACTURERS RECORD

SAND
Bank Building Concrete Paving
WASHED GRAVEL
In Car, Scow and Barge Lots

THE ARUNDEL CORPORATION
BALTIMORE, MD.

Office, PIER 2, PRATT STREET
Wharves: PIER 2, PRATT ST., and FOOT OF CLINTON ST.

Woodstock Slag for economy and permanence in Road Building and General Construction
WOODSTOCK SLAG CORP.
Southern Railway Bldg., Birmingham, Ala.

SAND—GRAVEL—BRICK FILTER GRAVEL

Washed Sand and Gravel for Concrete Roads and Buildings
Filter Gravel, all sizes—Building Bricks
FRIEND & CO., INC. River St., Petersburg, Va.

POWER SHOVELS
Cranes, Trenchers
SKIMMERS
Full or part circle
BAY CITY SHOVELS, Inc.
Bay City, Mich.

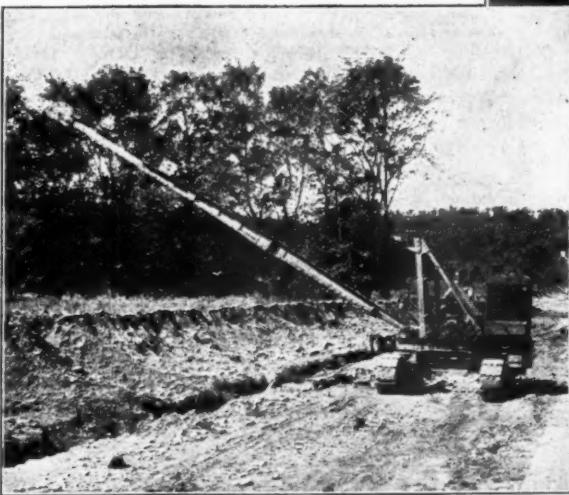
BUCYRUS ERIE KNOWN RELIABILITY
Bucyrus-Erie equipment is known the world over, for dependable, low-cost operation. Shovels, Draglines, Cranes—all sizes—Gas, Diesel, Electric, Gas + Air, Diesel + Air, Steam. Also Railway Cranes, Spreader Plows, etc.
Write for bulletins.
BUCYRUS-ERIE COMPANY
So. Milwaukee, Wis., Evansville, Ind., Erie, Pa.

EXCAVATORS **P&H** **SHOVELS**
DRAGLINES **CRANES**
Get Bulletins with complete description of new models. Made in sizes from $\frac{1}{2}$ to $3\frac{1}{2}$ cu. yds.
All convertible.
HARNISCHFEGER CORPORATION
3827 National Ave., Milwaukee, Wis.

For Deep and Wide Excavations Use . . .
SAUERMAN CABLEWAYS
These machines dig, convey and elevate from pit to bin or pile in a straight-line operation.
Write for free catalog.
SAUERMAN BROS., INC.
490 S. Clinton St. Chicago

The AUSTINS For 1930

**ARE AGAIN "IMPROVED" AND AGAIN
SET THE PACE FOR
GREATER
TRENCH EXCAVATING
EFFICIENCY**



"IMPROVED"

In design - greater mechanical efficiency - still stronger construction - still lower operating cost - and greater production capacity.

AUSTINS will always lead - learn why by writing for descriptive catalogs covering Trench Excavators and Backfillers.

AUSTIN
MACHINERY CORPORATION
MUSKEGON - MICH.

Mr. Contractor— —Mr. Highway Engineer—You Need This Heater—



OUR STYLE E
65 to 200 Gallons

TESTED—PROVEN—RELIABLE
MADE BY
THE JOS. HONHORST CO.
1016-20 WEST SIXTH ST.
CINCINNATI, OHIO
WRITE FOR INFORMATION



THIS FLOOR PLATE—

should be installed wherever it is important that a safe and firm foothold be obtained.

CENTRAL "KNOBBY" NON-SKID FLOORPLATES

offer the most efficient anti-slip surface ever produced in steel plate form.

Send for detailed information and sample

Central Iron & Steel Co.
Harrisburg, Penna.

Offices in all principal cities

UNDERWRITERS'
LABORATORIES
INSPECTED
S.A. 443



REG.
U.S.
PAT.
OFF.

Tamping Costs Go Down!

There's far less time put in on hand tamping when you put down the asphalt with an ERIE Roller—

Better clearance, easier steering, shorter turning radius allow the ERIE to get into the close places and compact the asphalt close to curbs, corners, manholes, etc.

Write today for Bulletin "M".

ERIE MACHINE SHOPS
Erie, Pa.

ERIE ROLLERS
GAS AND STEAM
SAME HIGH QUALITY

THE HUBER MANUFACTURING COMPANY
310 EAST CENTER ST., MARION, OHIO.
Send for Catalog

HUBER 4 CYL. MOTOR ROLLER

FLOOR PLATES

"The Plate with Perfect Diamonds"

AMERICAN PRESSED STEEL CO.

Commercial Trust Building—Philadelphia—Penn.

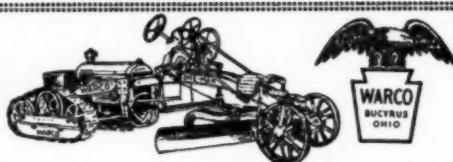
ACME ROAD MACHINERY COMPANY, FRANKFORT, N.Y.

ACME Stone Crushers



ACME ROAD MACHY. CO. FRANKFORT, N.Y.

Graders Crawlers Scoops



WARCO
BUCKRUS
OHIO

W.A. RIDDELL CO., BUCYRUS, O.

Crushed Stone
Mascot Chatts Roofing Gravel
Asphaltic Roadway Gravel
Asphalt Filler Dust

PULVERIZED
MASCOT
LIMESTONE

AMERICAN LIMESTONE COMPANY
KNOXVILLE TENNESSEE



KOEHRING

Safe, Fast Batch-meter Control!

N. E. C. LINES

KOEHRING

Pavers, Mixers; Power Shovels, Pull Shovels, Cranes, Draglines; Dumptors.

INSLEY

Excavators; Concrete Placing Equipment, Cars, Buckets, Derricks.

T. L. SMITH

Tilting and Non-tilting Mixers, Pavers, Weigh-Mix.

PARSONS

Trench Excavators, Backfillers.

C. H. & E.

Portable Saw Rigs, Pumps, Hoists, Material Elevators.

KWIK-MIX

Mixers: Concrete, Plaster and Mortar.

SAFE, because batchmeter sounds pre-alarm warning

bell just before mixing period is ended. This gives operator time to check if skip is loaded and free of trucks before starting up the skip automatically by pressing foot pedal.

Fast, because at expiration of mixing period, batchmeter in the fraction of a second, starts discharge and starts the charging skip up to shoot new materials and water into drum at

the exact split-second that discharge is completed!

All this gives operator plenty of time to operate distributing bucket, to "spot" concrete exactly and to spread it so as to cut down the work of shovellers to a minimum — and to swing boom by power ready to "spot" the next batch!

Koehring Speed — Koehring Heavy Duty construction are the two greatest profit factors you can take into partnership.

Know the Koehring!

National Equipment Corporation

30th St. & Concordia Ave.
Milwaukee, Wisconsin

J. L. Hart Machinery Co., 407 Eunice Ave., Tampa, Fla.; Young & Vann Supply Co., 1725 First Ave., Birmingham, Ala.; Wilson-Woosner-Wilkinson Co., 108 Fatherland St., Nashville, Tenn.; Graham B. Bright, 981 Electric Bldg., Richmond, Va.; D. C. Elphinstone, Inc., 120 S. Calvert St., Baltimore, Md.; General Equipment Machinery Co., Inc., 116 N. E. Sixth St., Miami, Fla.; W. C. Cope & Co., 160 Walker St., Atlanta, Ga.; Carolina Contractors Equipment & Supply Co., P. O. Box 576, Columbia, S. C.

Classified Reference Index for Buyers

ABRASIVE MATERIALS.

Carborundum Co., Niagara Falls, N. Y. —(Rock.) Kentucky Rock Asphalt Co., Louisville, Ky.

ACCOUNTANTS (Cert. and Cost.)

Black & Co., Baltimore, Md. Ernst & Ernst, New York, N. Y. Hollowell Gorham & Co., Greensboro, N. C. Le Baron, E. T., Jacksonville, Fla.

AERIAL MAPS and SURVEYS.

Airmap Corp. of Amer., Brooklyn, N. Y.

AIR COMPRESSORS (Stationary and Portable.)

Chicago Pneumatic Tool Co., New York. De Laval Steam Turbine Co., Trenton, N. J. General Electric Co., Schenectady, N. Y. Ingersoll-Rand Co., New York, N. Y. Novo Engine Co., Lansing, Mich. O. K. Clutch & Mfg. Co., Columbus, Pa. Quincy Compressor Co., Quincy, Ill. Bullard Machinery Co., Chicago, Ill. Westinghouse Traction Brake Co., Wissington, Pa.

AIR CONDITIONING SYSTEMS.

Skinner Bros. Mfg. Co., St. Louis, Mo. Swartwout Co., Cleveland, Ohio.

AIRPORTS.

Shaw Co., Russell B., St. Louis, Mo.

ALUMINUM BRONZE POWDER.

Aluminum Co. of Amer., Pittsburgh.

AMMONIA Valves and Fittings.

Vogt Mfg. Co., Henry, Louisville, Ky.

ANGLE IRON-WORKING MACHINERY.

Whitney Metal Tool Co., Rockford, Ill.

APPRAISERS.

American Appraisal Co., Milwaukee, Wis. Conard & Buzby, Burlington, N. J. Main, Inc., Chas. T., Boston, Mass.

ARCHITECTS.

Bond, Geo. Harwell, Atlanta, Ga. Chase, Wm. J. J., Atlanta. Lindsay, Claude H., Jackson, Miss. Main, Inc., Chas. T., Boston, Mass. Milburn, Heister & Co., Wash., D. C. Moyer Co., Tilghman, Allentown, Pa. Simmons, Inc. & Associates, B. Stanley, Washington, D. C. Preacher & Co., Inc., G. Lloyd, Atlanta. Surrin & Co., J. E., Greenville, S. C. Wheeler, Walter H., Minneapolis, Minn. Widmer Engineering Co., St. Louis, Mo.

ARCHITECTS' SUPPLIES.

Weber Co., Inc., F., Philadelphia, Pa.

ARCHITECTURAL BRONZE.

Chase Brass & Copper Co., Waterbury, Conn.

IRON Work.

Dietrich Brothers, Baltimore, Md. Virginia Bridge & Iron Co., Roanoke, Va.

ASH Removal Systems (Gates, Hoppers, Quenchers, etc.)

Allen-Sherman-Hoff Co., Phila., Pa.

Sluicing Systems.

Allen-Sherman-Hoff Co., Phila., Pa.

Storage Tanks (Cast Iron.)

Allen-Sherman-Hoff Co., Phila., Pa.

ASPHALT.

Gulf Refining Co., Pittsburgh, Pa.

Filler.

American Limestone Co., Knoxville, Tenn. Servised Premoulded Products, Inc., Chicago, Ill.

Paving.

Barber Asphalt Co., Philadelphia, Pa.

—(Rock.)

Kentucky Rock Asphalt Co., Louisville, Ky.

AUDITORS.

Black & Co., Baltimore, Md. Ernst & Ernst, New York, N. Y. Hollowell Gorham & Co., Greensboro, N. C. Le Baron, E. T., Jacksonville, Fla.

BABBITT METAL.

Ryerson & Sons, Inc., Jos. T., St. Louis and New York.

BACKFILLERS.

Austin Machinery Corp., Muskegon, Mich. Buckeye Traction Ditcher Co., Findlay, O. Harnischfeger Corp., Milwaukee, Wis. National Equipment Corp., (Insley, Parsons), Milwaukee, Wis.

BALLAST (Railroad.)

American Limestone Co., Knoxville, Tenn.

BANKERS and BROKERS.

Provident Savings Bank & Trust Co., Cincinnati, Ohio. Taylor, Wilson & Co., Inc., Cincinnati, Ohio.

BANKS and TRUST COMPANIES.

Baltimore Commercial Bank, Balt., Md. Bank of Alabama, The, Ensley, Ala. Bank of New York & Trust Co., N. Y. Equitable Trust Co., New York, N. Y. First and Merchants National Bank, Richmond, Va.

Maryland Trust Co., Baltimore, Md. Merchantile Trust Co., Baltimore, Md.

BARGES (Steel.)

American Bridge Co., New York, N. Y. McClinton-Marshall Co., Pittsburgh, Pa.

BARS (Steel, Rounds, Flats, Hexagon and Squares.)

Carnegie Steel Co., Pittsburgh, Pa. Conors Steel Co., Birmingham, Ala. Gulf States Steel Co., Birmingham, Ala. Knoxville Iron Co., Knoxville, Tenn. Republic Steel Corp., Youngstown, Ohio. Ryerson & Son, Inc., Jos. T., St. Louis, and New York. Sweet's Steel Corp., Williamsport, Pa. Tennessee Coal, Iron & Railroad Co., Birmingham, Ala. Timken Roller Bearing Co., Canton, Ohio. Virginia Bridge & Iron Co., Roanoke, Va. Youngstown Sheet & Tube Co., Youngstown, Ohio.

BATTERIES (Storage.)

Electric Storage Battery Co., Phila., Pa.

BEAMS, CHANNELS, ANGLES.

Belmont Iron Works, Philadelphia, Pa. Carnegie Steel Co., Pittsburgh, Pa. Chattanooga Boiler & Tank Co., Chattanooga, Tenn. Tennessee Coal, Iron & Railroad Co., Birmingham, Ala. Virginia Bridge & Iron Co., Roanoke, Va.

BEARINGS (Anti-friction.)

Hyatt Roller Bearing Co., Newark, N. J. Timken Roller Bearing Co., Canton, Ohio.

—(Line Shaft.)

Wood's Sons Co., T. B., Chambersburg, Pa.

—(Roller.)

Hyatt Roller Bearing Co., Newark, N. J. Timken Roller Bearing Co., Canton, Ohio.

BELT (Chain.)

Diamond Chain & Mfg. Co., Indianapolis.

Morse Chain Co., Ithaca, N. Y.

—(Leather, Canvas, Rubber.)

Baltimore Belting Co., Baltimore, Md.

Charlotte Leather Belting Co., Charlotte, N. C.

Republic Rubbe Co., Youngstown, Ohio.

—Dressing.

Dixon Crucible Co., Jos., Jersey City, N. J.

—Conveyors.

Barber-Green Co., Aurora, Ill.

BENCH LEGS.

Angle Steel Stool Co., Plainwell, Mich.

—Drawers (Steel.)

Angle Steel Stool Co., Plainwell, Mich.

BENCHES AND TABLES.

(Steel.)

Angle Steel Stool Co., Plainwell, Mich.

BILLETS (Basic Open Hearth.)

Gulf States Steel Co., Birmingham, Ala. Republic Steel Corp., Youngstown, Ohio. Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

BINS (Drill and Reamer.)

Angle Steel Stool Co., Plainwell, Mich.

—(Steel Loading.)

Blaw-Knox Co., Pittsburgh, Pa.

BLASTING POWDER and Accessories.

Du Pont de Nemours & Co., E. I. DuPont de Nemours & Co., Wilmington, Del. Hercules Powder Co., Inc., Wilmington, Del.

BLINDS (Venetian and Awning.)

Wilson Corp., The J. G., New York

BLOCKS (Chain.)

Harrington Co., The, Philadelphia, Pa.

—TACKLE for Wire and Manila Rope.

Patterson Co., W. W., Pittsburgh

BLOWERS and Exhaust Fans.

National Blow Pipe & Mfg. Co., Ltd., New Orleans, La.

BLOW PIPE SYSTEMS.

National Blow Pipe & Mfg. Co., Ltd., New Orleans, La. Skinner Bros. Mfg. Co., St. Louis, Mo.

BOILERS (New.)

Babcock & Wilcox Co., The, New York.

Charleston Dry Dock & Machine Co., Charleston, S. C.

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Cole Mfg. Co., R. D., Newnan, Ga.

Combustion Engr. Corp., New York, N. Y.

Hedges Walsh Welder Co., Chattanooga, Tenn.

Lombard Iron Works & Supply Co., Augusta, Ga.

Schofield's Sons Co., J. S., Macon, Ga.

Titusville Iron Works Co., Titusville, Pa.

Vogt Mfg. Co., Henry, Louisville, Ky.

—(Used.)

Delta Equipment Co., Philadelphia, Pa.

O'Brien Machinery Co., Philadelphia, Pa.

Randie Machinery Co., The, Cincinnati, Ohio.

Zelnicke Supply Co., W. A., St. Louis.

BOILER SETTINGS.

Harrison-Walker Refractories Co., Pittsbhg.

—Tubes.

Boiler Tube Co. of America, Pittsburgh.

National Tube Co., Pittsburgh, Pa.

Ryerson & Son, Inc., Jos. T., St. Louis and New York.

—Tubes (Charcoal, Iron.)

Reading Iron Co., Reading, Pa.

BOLTS, Rivets, Studs, Washers.

Bethlehem Steel Co., Bethlehem, Pa.

Progressive Mfg. Co., Torrington, Conn.

Republic Steel Corp., Youngstown, Ohio.

Russell, Burdsall & Ward Bolt & Nut Co., Port Chester, N. Y.

Ryerson & Son, Inc., Jos. T., St. Louis and New York.

Virginia Bridge & Iron Co., Roanoke, Va.

—(Track.)

Sweet's Steel Co., Williamsport, Pa.

BOND BUYERS.

Garroway & Co., S. G., Chicago.

Hanchett Bond Co., Inc., The, Chicago.

Law & Co., A. M., Spartanburg, S. C.

Marx & Co., Birmingham, Ala.

Mercantile Trust Co., Baltimore, Md.

Nuveen & Co., John, Chicago, Ill. Provident Savings Bank and Trust Co., Cincinnati, Ohio.

Robinson-Humphrey Co., Atlanta, Ga. Seagondold & Mayer, Cincinnati, Ohio. Taylor, Wilson & Co., Inc., Cincinnati, Ohio.

BORING (Core.)

Mott Core Drilling Co., Huntington, W. Va.

Pennsylvania Drilling Co., Pittsburgh, Pa. Southern Drilling Co., Saltville, Va. Sprague & Henwood, Inc., Scranton, Pa.

BOXES (Paper.)

Old Dominion Box Co., Lynchburg, Va.

BRASS GOODS.

Chase Brass & Copper Co., Waterbury, Conn.

Copper and Brass Research Assn., New York.

Mueller Co., Decatur, Ill.

BRICK (Common Building.)

Friend & Co., Inc., Petersburg, Va.

—(Face.)

Alabama Clay Prod. Co., Birmingham.

—(Fire.)

Alabama Clay Prod. Co., Birmingham.

Cumbria Clay Products Co., Blackford, O.

Dee Co., Wm. E., Oak Hill, Ohio.

Charles Sons Co., Charles, Cincinnati.

—(Vitrified, Paving.)

Nati. Paving Brick Mfg. Assn., Washington, D. C.

—and Clayworking Machinery.

Steel & Sons, J. C., Statesville, N. C.

BRIDGE (Asphalt Planking.)

Servised Premoulded Products, Inc., Chicago, Ill.

—Operating Machinery

Kate Gear & Machine Co., Phila., Pa.

—Timber.

Amer. Crosting Co., Louisville, Ky.

Industrial Lumber Co., Elizabeth, La.

BRIDGES (Concrete.)

Atlantic Bridge Co., Greensboro, N. C.

—(Creosoted Wood.)

Atlantic Bridge Co., Greensboro, N. C.

—(Steel.)

American Bridge Co., New York, N. Y.

Atlantic Bridge Co., Greensboro, N. C.

Belmont Iron Works, Philadelphia, Pa.

Champion Bridge Co., Wilmington, O.

Converse Bridge & Steel Co., Chattanooga, Tenn.

Indus. Iron Works Co., Birmingham, Ala.

McClinton-Marshall Co., Pittsburgh, Pa.

Nashville Bridge Co., Nashville, Tenn.

Richmond Struct. Steel Co., Richmond, Va.

Virginia Bridge & Iron Co., Roanoke, Va.

BRONZE (Architectural.)

Heath Company, J. S., Waukegan, Ill.

—(Machine.)

Moccasin Brushing Co., Chattanooga, Tenn.

BUBBLERS.

Rundt-Snene Mfg. Co., Milwaukee, Wis.

Taylor Co., Halsey W., Warren, Ohio.

BUCKETS (Clam Shell.)

Blaw-Knox Co., Pittsburgh, Pa.

Hayward Co., The, New York, N. Y.

Industrial Brownhoist Corp., Cleveland, O.

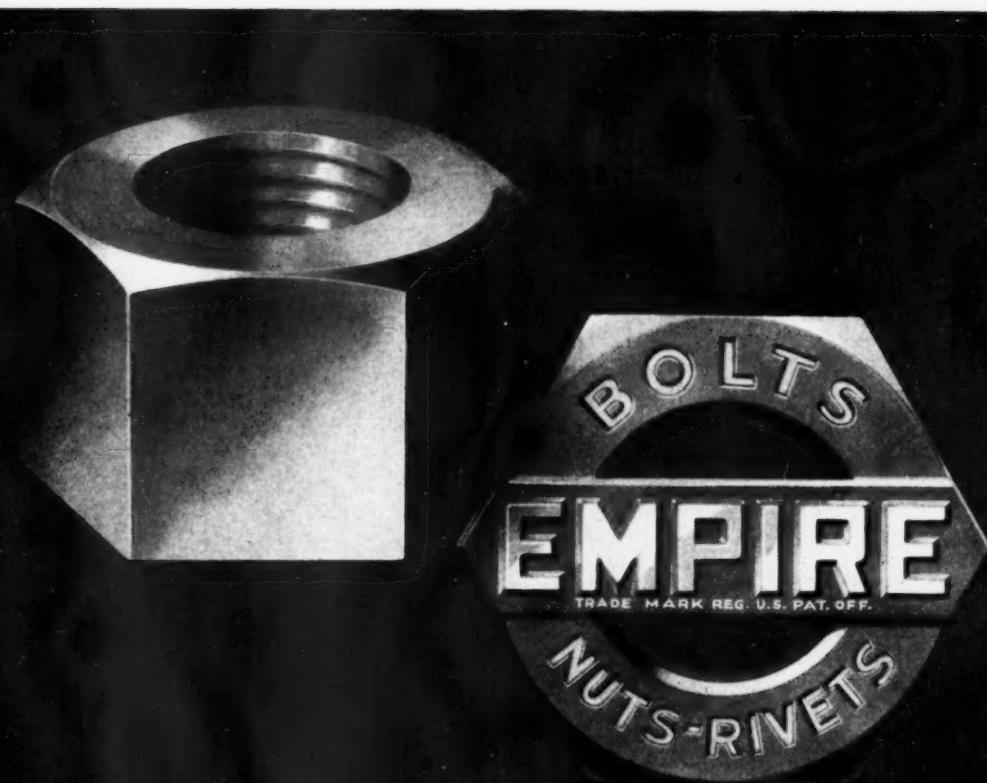
Owen Bucket Co., The, Cleveland, Ohio.

Stuebner Iron Works, G. L., Long Island City, N. Y.

—(Dredging, Excavating, Sewer, etc.)

Hayward Co., The, New York, N. Y.

Monighan Mfg. Corp., Chicago, Ill.



SUPERLATIVES can not be applied safely to prosaic products. Yet there must be something unusual about any line of products as favorably known as Empire bolts, nuts and rivets.

RUSSELL, BURDSALL & WARD
BOLT AND NUT COMPANY

ROCK FALLS, ILL.

PORT CHESTER, N.Y.

CORAOPOLIS, PA.

PHILADELPHIA

CHICAGO

DETROIT

SAN FRANCISCO

LOS ANGELES

SEATTLE

PORTLAND

BUILDERS and Contractors.
Barstow & Co., W. S., Reading, Pa.
Moyer Co., Tighman, Allentown, Pa.
Stone & Webster, Inc., Boston, Mass.
Thompson & Bros., T. C., Charlotte, N. C.
White Engineering Corp., J. G., New York.

BUILDINGS (Industrial.)
Belmont Iron Works, Philadelphia, Pa.
Blaw-Knox Co., Pittsburgh, Pa.
Braden Steel Corp., Tulsa, Okla.
Butler Mfg. Co., Kansas City, Mo.
Maryland Metal Building Co., Balt., Md.
McClintic-Marshall Co., Pittsburgh, Pa.
Nashville Bridge Co., Nashville, Tenn.
Truscon Steel Co., Youngstown, Ohio.
Virginia Bridge & Iron Co., Roanoke, Va.
—(Portable Sheet Metal.)
Braden Steel Corp., Tulsa, Okla.
Butler Mfg. Co., Kansas City, Mo.
Maryland Metal Building Co., Balt., Md.

BULKHEADS.
Shore-Line Builders, Inc., Jacksonville, Fla.
Snare Corp., Frederick, New York, N. Y.

BULLDOZERS.
Beauty Machine & Mfg. Co., Hammond, Ind.
Trackson Co., Milwaukee, Wis.

BUSHINGS (Brass and Bronze.)
Meccasin Bushing Co., Chattanooga, Tenn.

BUSINESS METHODS.
Ernst & Ernst, New York, N. Y.

CABINETS (Steel.)
Angle Steel Stool Co., Plainwell, Mich.

CABLES (Stud Link.)
Woodhouse Chain Works, Trenton, N. J.
—(and Wire (Electric.)
American Steel & Wire Co., Balt., Md.
Okonite Co., New York, N. Y.
Boehling's Sons Co., John A., Trenton, N. J.
Western Electric Co., New York City.

CABLEWAYS (Overhead Suspension.)
Broderick & Bascom Rope Co., St. Louis.
Bauerman Bros., Chicago, Ill.

CALCIUM CHLORIDE.
Grasselli Chemical Co., Inc., Birmingham, Ala.

CAN and Box-Making Machinery (Tin.)
Bliss Co., E. W., Brooklyn, N. Y.

CAR Loaders and Unloaders.
Barber-Green Co., Aurora, Ill.
Stephens-Adamson Mfg. Co., Birmingham, Ala.
—(Pullers.)
Webster & Weller Mfg. Companies, Chicago, Ill.

CARS (Dump, Industrial, Logging and Mine.)
Atlas Car & Mfg. Co., The, Cleveland, O.
Eaton Car & Construction Co., Easton, Pa.
Koppel Ind. Car & Equip. Co., Koppel, Pa.
Southern Iron & Equipment Co., Atlanta.
—(Steps (Safety.)
Irving Iron Works Co., Long Island City, N. Y.

CASTERS (Truck.)
Service Caster & Truck Co., Albion, Mich.

CASTINGS (Brass, Bronze and Aluminum.)
Inter-State Fdry. & Mach. Wks., Johnson City, Tenn.
Meccasin Bushing Co., Chattanooga, Tenn.
—(Chilled Iron.)
Fuller Lehigh Co., Fullerton, Penna.
—(Gray Iron.)
Fuller Lehigh Co., Fullerton, Penna.
Giamorgan Pipe & Fdry. Co., Lynchburg, Va.
Inter-State Fdry. & Mach. Wks., Johnson City, Tenn.
National Cast Iron Pipe Co., Birmingham, Ala.
Roanoke Iron & Bridge Works, Inc., Roanoke, Va.
Salem Fdry. & Mach. Wks., Salem, Va.
U. S. Pipe & Foundry Co., Burlington, N. J.

—(Malleable Iron and Steel.)
Timken Roller Bearing Co., Canton, O.

—(Semi-Steel.)
Sales Fdry. & Machine Works, Salem, Va.

—(Steel.)
Bethlehem Steel Co., Bethlehem, Pa.
Crucible Steel Casting Co., Lansdowne, Dela. Co., Pa.
Deemer Steel Casting Co., New Castle, Del.
Lenkenheimer Co., Cincinnati, Ohio.

CAUSTICIZERS.
Swenson Evaporator Co., Harvey, Ill.

CEMENT (High Temperature.)
Harrison Walker Refractories Co., Pittsb.

—(Portland.)
Alpha Portland Cement Corp., Birmingham, Ala.
Lehigh Portland Cement Co., New York.
Louisville Cement Co., Louisville, Ky.
Portland Cement Assn., Chicago, Ill.

—(Guns.)
Cement-Gun Co., Inc., Allentown, Pa.

—(Machinery.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.

CHAIN BLOCKS (See Blocks, Chain.)

CHAINS (Dredge, Quarry, Steam Shovel.)
Knoxville Iron Co., Knoxville, Tenn.
Woodhouse Chain Works, Trenton, N. J.

—(High Speed Roller.)
Diamond Chain & Mfg. Co., Indianapolis.

—(Silent Drive.)
Diamond Chain & Mfg. Co., Indianapolis.
Morse Chain Co., Ithaca, N. Y.

—(Sprocket.)
Chain Belt Co., Milwaukee, Wis.
Diamond Chain & Mfg. Co., Indianapolis.
Morse Chain Co., Ithaca, N. Y.

—(Welded.)
Woodhouse Chain Works, Trenton, N. J.

CHAIRS (Opern and Thetre.)
Andrews Co., A. H., Chicago, Ill.

—(and Stools (Steel.)
Angle Steel Stool Co., Plainwell, Mich.

CHEMICALS.
Grasselli Chemical Co., Inc., Birmingham, Ala.

CHEMICAL MACHINERY
Swenson Evaporator Co., Harvey, Ill.

CHEMICAL TOILETS.
Kaustine Co., Inc., Perry, N. Y.

CHEMISTS, CHEMICAL ENGINEERS (Analytical.)

Barrow-Agee Laboratories, Memphis, Tenn.
Flood & Co., Walter H., Chicago, Ill.

Froehling & Robertson, Inc., Richmond, Va.
Hunt Co., Robert W., Chicago, Ill.

Meigs, Bassett & Slaughter, Phila., Pa.
Pleard Laboratories, The, Birmingham, Ala.

Pittsburgh Testing Laboratories, Pittsburgh, Pa.

Southwestern Laboratories, Fort Worth, Texas.

Stillman & Van Siclen, New York.
Wiley & Co., Inc., Baltimore, Md.

—(Consulting, Paper Industry.)
Froehling & Robertson, Inc., Richmond, Va.

—(Consulting, Paper Industry.)
Froehling & Robertson, Inc., Richmond, Va.

—(Radial Brick.)
Rust Engineering Co., Birmingham, Ala.

CHLORIDE ACCUMULATOR.
Electric Storage Battery Co., Phila., Pa.

CHLORINATORS.
Rees, S. P., Atlanta

CIRCUIT BREAKERS.
I. T. E. Circuit Breaker Co., Phila., Pa.
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

CITY AND TOWN PLANNING.
Draper, F. S., Charlotte, N. C.
Ludlow Engineers, Winston-Salem, N. C.

CLOCKS (For all purposes.)
Kaiser Klock Co., L. F., Baltimore, Md.

—(Watchman's Portable.)
Davis-Paradis Watchman's Clock Corp., New York, N. Y.

Kaiser Klock Co., L. F., Baltimore, Md.

—(Malleable Iron and Steel.)
Timken Roller Bearing Co., Canton, O.

CLUTCHES (Friction.)
Caldwell Co., Inc., W. E., Louisville, Ky.
Schults & Son, A. L., Chicago, Ill.
Wood's Sons Co., T. B., Chambersburg, Pa.

COAL (Bituminous.)
Sloss-Sheffield Steel & Iron Co., Birmingham, Ala.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

—(and Ash-Handling Mch.)
Allen-Sherman-Hoff Co., Phila., Pa.

Chain Belt Co., Milwaukee, Wis.
Hayward Co., The, New York, N. Y.
Industrial Brownholst Corp., Cleveland, O.
Northwest Engineering Co., Chicago.
Stephens-Adamson Mfg. Co., Birmingham, Ala.
Webster & Weller Mfg. Companies, Chicago, Ill.

—(Bunkers (Cast Iron.)
Allen-Sherman-Hoff Co., Phila., Pa.

—(Tipples.)
American Bridge Co., New York, N. Y.
Virginia Bridge & Iron Co., Roanoke, Va.

COCKS (Service.)
Marco Nordstrom Valve Co., San Francisco, Calif.

COKE.
Sloss-Sheffield Steel & Iron Co., Birmingham, Ala.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

COLUMNS (Cast Iron.)
U. S. Pipe & Foundry Co., Burlington, N. J.

COMPRESSORS (Gasoline Extraction.)
Sullivan Machinery Co., Chicago, Ill.

CONCRETE (Block Machinery.)
Blystone Mfg. Co., Cambridge Springs, Pa.

—(Block Pallets.)
Commercial Shearing & Stamping Co., Youngstown, Ohio.

—(Construction (Reinforced.)
Cement Gun Co., Inc., Allentown, Pa.
Cement Gun Construction Co., Chicago.
Rust Engineering Co., Birmingham, Ala.

—(Floor Slabs.)
American Cement Tile Mfg. Co., Pittsburgh, Pa.

—(Information Only.)
Portland Cement Assn., Chicago, Ill.

—(Mixers.)
Blystone Mfg. Co., Cambridge Springs, Pa.
Chain Belt Co., Milwaukee, Wis.
Dunning & Bosher, Press Co., Inc., Syracuse, N. Y.

Jaeger Machine Co., Columbus, Ohio.
Lansing Co., Lansing, Mich.

—(Pipe Machinery (See Pipe Machinery, Concrete.)

—(Placing Equipment.)
National Equipment Corp. (Insley Division) Milwaukee, Wis.

—(Road Curing.)
McEverlast, Inc., Los Angeles, Cal.

—(Roofing Tile.)
American Cement Tile Mfg. Co., Pittsburgh, Pa.

CONDENSERS.
Chicago Pneumatic Tool Co., New York.
Ingersoll-Rand Co., New York, N. Y.
Manistein Iron Works Co., Manistein, Mich.
Swenson Evaporator Co., Harvey, Ill.
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

CONDUITS (Electric, Interior, Steel.)
Western Electric Co., New York City.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

CONTRACTORS (Airports.)
Miller & Assoc., Wendell P., Chicago.

—(Bridge.)
Kansas City Bridge Co., Kansas City, Mo.
Snare Corp., Frederick, New York.

—(Drainage and Dredging.)
Arundel Corp., The, Baltimore, Md.
Atlantic Gulf and Pacific Co., New York.

—(Electrical.)
Industrial Electrical Co., Savannah, Ga.
Walker Electrical Co., Atlanta, Ga.
Webb Electric Co., Anderson, S. C.

—(Foundations and Dams.)
Calligan & Co., A. H., Richmond, Va.
Snare Corp., Frederick, New York, N. Y.

CONVEYING AND ELEVATING MACHINERY.
Barber-Green Co., Aurora, Ill.
Chain Belt Co., Milwaukee, Wis.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.
Stephens-Adamson Mfg. Co., Birmingham, Ala.
Universal Crusher Co., Cedar Rapids, Iowa.
Webster & Weller Mfg. Companies, Chicago, Ill.

COPING MACHINES.
Beauty Machine & Mfg. Co., Hammond, Ind.

CORRESPONDENCE SCHOOLS.
International Correspondence Schools, Scranton, Pa.

COST SERVICE.
Le Baron E. T., Jacksonville, Fla.

—(General.)
Angle-Blackford Co., Greensboro, N. C.
Blair, Algernon, Montgomery, Ala.
Charleston Constructors, Inc., Charleston, S. C.
Cornell-Young Co., Inc., Macon, Ga.
Fiske-Carter Constr. Co., Greenville, S. C.
Gridley Constr. Co., Lee A., Knoxville, Tenn.

Saville, Inc., Allen J., Richmond, Va.
Snare Corp., Frederick, New York, N. Y.
Stone & Webster, Inc., Boston, Mass.
Thompson & Bros., T. C., Charlotte, N. C.
Tucker & Laxton, Charlotte, N. C.
White Engineering Corp., J. G., New York.

—(Industrial Buildings.)
Angle-Blackford Co., Greensboro, N. C.
Barstow & Co., W. S., Reading, Pa.
Blair, Algernon, Montgomery, Ala.
Fiske-Carter Constr. Co., Greenville, S. C.
Gridley Constr. Co., Lee A., Knoxville, Tenn.

—(Mill Village.)
Hornbuckle Contracting Co., Atlanta, Ga.

—(Plastering.)
Gomez & Co., P. L., Atlanta, Ga.
Jennings & Co., Floyd, Atlanta, Ga.

—(Power Plants.)
Snare Corp., Frederick, New York, N. Y.

—(Railroad.)
Calligan & Co., A. H., Richmond, Va.
Cornell-Young Co., Inc., Macon, Ga.

—(Reinforced Concrete.)
Blair, Algernon, Montgomery, Ala.
Cement Gun Construction Co., Chicago.
Gunite Cone & Constr. Co., Kansas City.
Tucker & Laxton, Charlotte, N. C.

—(Road and Street Paving.)
Fiske-Carter Constr. Co., Greenville, S. C.
Gridley Constr. Co., Lee A., Knoxville, Tenn.
Hornbuckle Contracting Co., Atlanta, Ga.
McCrory Co., The J. B., Atlanta, Ga.

—(Sewerage and Waterworks.)
Gridley Constr. Co., Lee A., Knoxville, Tenn.
Hardaway Contracting Co., Columbus, Ga.
Hornbuckle Contracting Co., Atlanta, Ga.
McCrory Co., The J. B., Atlanta, Ga.
Snare Corp., Frederick, New York, N. Y.
Tucker & Laxton, Charlotte, N. C.

—(Swimming Pool.)
Rees, S. P., Atlanta, Ga.

—(Water-Works.)
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

—(Machinery and Supplies (New.)
Bay City Shovels, Inc., Bay City, Mich.
Weller & Co., Birmingham, Ala.
W-K-M Co., Inc., Houston, Texas.

—(Machinery and Supplies (Used.)

Christian & Co., J. R., Houston, Tex.
Cohen, Chas. F., Lima, O.
Dempster Equip. Co., Knoxville, Tenn.
Equip. Sales & Rentals Co., Pittsburgh.
Grey Steel Products Co., New York.
Guion, Harry P., New York, N. Y.
Johnson & Hoehler, Fernwood, Pa.
Marine Metal & Supply Co., New York.
Penn Machinery Co., H. O., New York.

CONTRACT WORK WANTED.
(See following classifications.)
Boller and Tank Works.
Castings.
Forgings.
Foundry and Machine Shops.
Machinery (Special).
Ornamental Iron Work.
Patterns.
Sheet Metal Work.
Structural Steel and Iron.
Welding Plants.

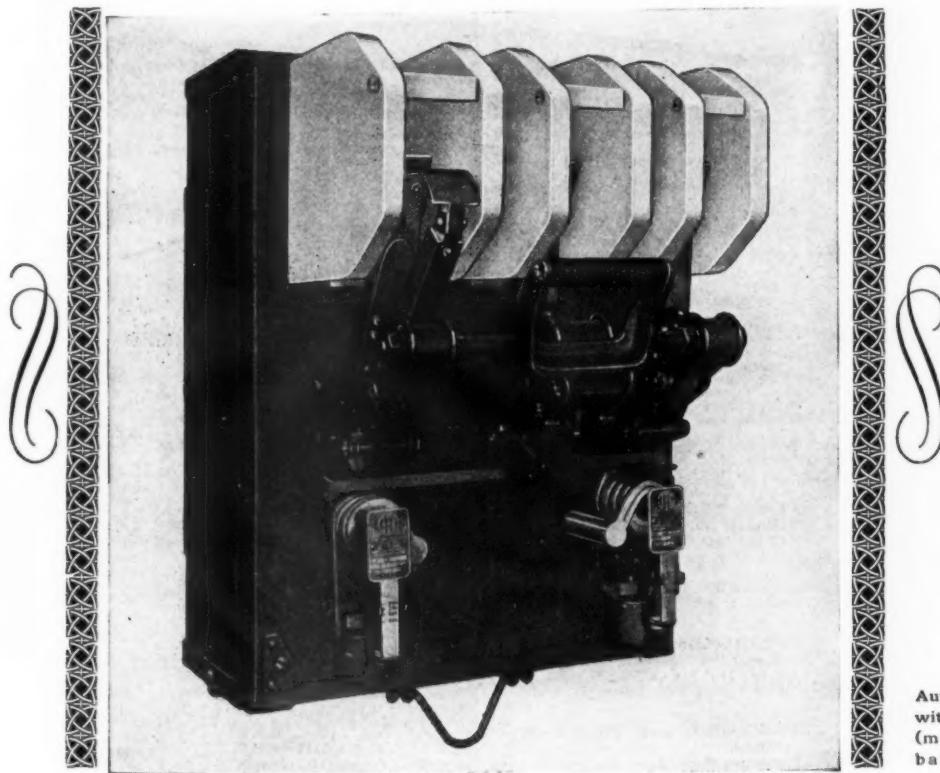
CONVEYING AND ELEVATING MACHINERY.
Barber-Green Co., Aurora, Ill.
Chain Belt Co., Milwaukee, Wis.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.
Stephens-Adamson Mfg. Co., Birmingham, Ala.
Universal Crusher Co., Cedar Rapids, Iowa.
Webster & Weller Mfg. Companies, Chicago, Ill.

COPING MACHINES.
Beauty Machine & Mfg. Co., Hammond, Ind.

CORRESPONDENCE SCHOOLS.
International Correspondence Schools, Scranton, Pa.

COST SERVICE.
Le Baron E. T., Jacksonville, Fla.

YOU CAN BREAK IT BETTER IN AIR - - -



Auto U-Re-Lite W
with Min-Arc-Ite
(minimum arc)
barriers.

- - - AND BEST WITH THE MIN-ARC-ITE U-RE-LITE

For the protection of A. C. circuits of 550 volts and under the modern engineer chooses U-Re-Lites — he knows he can "break it better in air" because air is a safe, self-restoring medium.

To make the U-Re-Lite even more effective, to increase its already high rupturing capacity, we have recently developed the *Min-Arc-Ite*.

The *Min-Arc-Ite* is a modern application of a time-proven principle in air break contacts — arc stretching coils that reduce short circuit arcs to a minimum. These coils with

their air cores and their freedom from the limitations of iron cores exert an arc stretching force which increases as short circuit values increase. The coils are firmly imbedded in flame-proof barriers surrounding each pole.

Auto U-Re-Lites W, Senior and Junior are now built with *Min-Arc-Ite* barriers — at no increase in cost.

Send for your copy of the 1930 I-T-E catalog giving full information on *Min-Arc-Ite* U-Re-Lites and other dependable protective equipment.

I-T-E CIRCUIT BREAKER COMPANY, 19th and HAMILTON STS., PHILADELPHIA

Birmingham, American-Traders Bank Building; Boston, 201 Devonshire; Buffalo, Ellicott Sq. Bldg.; Chicago, 333 N. Michigan Ave.; Cincinnati, Union Trust Bldg.; Cleveland, 439 Terminal Tower Bldg.; Dallas, 1810 Allen Bldg.; Denver, Tramway Bldg.; Detroit, Penobscot Bldg.; Duluth, 611 Providence Bldg.; Kansas City, Midland Bldg.; Los Angeles, 106 W. 3rd; Minneapolis, Plymouth Bldg.; Montreal, 151 LaGachetiere St. West; New Orleans, Hibernia Bank Bldg.; New York, 12 E. 41st; Omaha, Electric Bldg.; Philadelphia, 1505 Race; Pittsburgh, Park Bldg.; St. Louis, Bank of Commerce Bldg.; San Francisco, Call Bldg.; Seattle, 802 33rd Ave.; Toronto, 491 Adelaide St. E.; Vancouver, 500 Beatty Street; Winnipeg, Manitoba, Mining Exchange Bldg.

I-T-E PROTECTION

U-RE-LITES ~ ~ I-T-E CIRCUIT BREAKERS

COTTON GIN MACHINERY.

Continental Gin Co., Birmingham, Ala.
—
Mill Machinery.
Southern Spindle & Flyer Co., Inc., Charlotte, N. C.

COUNTING APPARATUS.

Weed-Root, Inc., Hartford, Conn.

COUPLINGS.

Golden's Flyer & Mach. Co., Columbus, Ga.
—
(Shaft.)
Wood's Sons Co., T. B., Chambersburg, Pa.

CRANES.

Austin Machinery Corp., Muskegon, Mich.
Buckeye Traction Ditcher Co., Findlay, O.
National Equipment Co. (Incl. Koehring, Parsons), Milwaukee, Wis.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
The Shovel Co., The Lorain, Ohio.

(Crawler.)

Buckeye Traction Ditcher Co., Findlay, O.
Harnischfeger Corp., Milwaukee, Wis.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
The Shovel Co., The Lorain, Ohio.

(Crawling Tractor.)

Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
The Shovel Co., The Lorain, Ohio.

(Electric Traveling.)

Harnischfeger Corp., Milwaukee, Wis.
Milwaukee Elec. Crane & Hoist Corp., Milwaukee, Wis.

(Full Circle Steam and Electric.)

Austin Machinery Corp., Muskegon, Mich.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
The Shovel Co., The Lorain, Ohio.

(Gasoline.)

Buckeye Traction Ditcher Co., Findlay, O.
Harnischfeger Corp., Milwaukee, Wis.
Industrial Brownhoist Corp., Cleveland, O.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
The Shovel Co., The Lorain, Ohio.

(Locomotive.)

Bucyrus-Erie Co., Erie, Penna.
Industrial Brownhoist Corp., Cleveland, O.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
The Shovel Co., The Lorain, Ohio.

(Material Handling.)

Bay City Shovels, Inc., Bay City, Mich.
Industrial Brownhoist Corp., Cleveland, O.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
The Shovel Co., The Lorain, Ohio.

(Portable.)

Beatty Machine & Mfg. Co., Hammond, Ind.

(Traveling, Hand Power.)

Harrington Co., The, Philadelphia, Pa.

CRAWLERS (Tractor.)

Riddell Co., W. A., Bucyrus, Ohio.
Truscon Co., Milwaukee, Wis.

CREOSOTED MATERIALS.

Amer. Creosote Wks., Inc., New Orleans.
Delaware Wood Preserving Co., Phila.
Savannah Creosoting Co., Savannah, Ga.

CREOSOTED TIMBER.

Ayer & Lord Tie Co., Chicago, Ill.
Brown Wood Preserving Co., Louisville, Ky.

CREOSOTE OIL.

Amer. Creosote Wks., Inc., New Orleans.
Ayer & Lord Tie Co., Inc., Chicago.

CREOSOTING (Wood Materials.)

Amer. Creosote Wks., Inc., New Orleans.
Amer. Creosoting Co., Inc., Louisville, Ky.
Brown Wood Preserving Co., Louisville, Ky.
Carolina Wood Preserving Co., Charleston, S. C.
Delaware Wood Preserving Co., Phila.
Eppinger & Russell Co., New York, N. Y.
Gulf States Creos. Co., Hattiesburg, Miss.
Savannah Creosoting Co., Savannah, Ga.
Taylor-Colquitt Co., Spartanburg, S. C.
Wales Wood-Preserving Co., Norfolk, Va.

CROSS-ARMS (Creosoted.)

Amer. Creosote Wks., Inc., New Orleans.
Amer. Creosoting Co., Inc., Louisville, Ky.
Savannah Creosoting Co., Savannah, Ga.
—
(Zinc Meta Arsenite Treated.)
Curtin-Howe Corp., New York, N. Y.

CROSS-TIES (Creosoted.)

Amer. Creosote Wks., Inc., New Orleans.
Amer. Creositing Co., Inc., Louisville, Ky.
Ayer & Lord Tie Co., Inc., Chicago.
Carolina Wood Preserving Co., Charleston, S. C.
Eppinger & Russell Co., New York, N. Y.
Savannah Creosoting Co., Inc., Savannah, Ga.
—
(Zinc Meta Arsenite Treated.)
Curtin-Howe Corp., New York, N. Y.

CRUSHED STONE (Read Concrete and Ballast.)

American Limestone Co., Knoxville, Tenn.
Bexley & Co., W. W., Roanoke, Va.

CRUSHERS (Coal and Coke.)

Fuller Lehigh Co., Fullerton, Pa.
—
Rock.
Universal Crusher Co., Cedar Rapids, Iowa.

CRUSHING and Pulverizing Machinery.

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Day Pulverizer Co., Knoxville, Tenn.
Fuller Lehigh Co., Fullerton, Pa.
McLanahan-Stone Machine Co., Hollidaysburg, Pa.
Raymond Bros. Impact Pulverizer Co., Chicago, Ill.
Universal Crusher Co., Cedar Rapids, Iowa.
W-K M Co., Inc., Houston, Texas.

CULVERT PIPE (Cast Iron.)

Amer. Cast Iron Pipe Co., Birmingham, Ala.
Cast Iron Pipe Research Assn., Chicago, Ill.
U. S. Pipe & Foundry Co., Burlington, N. J.

(Corrugated Metal.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Arco Culvert Mfrs. Assn., Middletown, O.
Dirks Culvert & Metal Co., Atlanta, Ga.
Dirks Culvert Mfg. Co., Little Rock, Ark.
Louisiana Corr. Culvert Co., Baton Rouge, La.
Tenn. Metal Culvert Co., Nashville, Tenn.
Western Metal Mfg. Co., Houston, Texas.

CURB PROTECTORS (Steel Bars.)

Truscon Steel Co., Youngstown, O.

CUTTERS (Wire Rope.)

Leschen & Sons Rope Co., A., St. Louis.

CYLINDERS (Compressed Air, Gas.)

Janney, Jr., Jas. A., Phila., Pa.
National Tube Co., Pittsburgh, Pa.

DERRICKS and Derrick Fittings.

Clyde Iron Works Sales Co., Duluth, Minn.
Sagamore Derrick Co., Chicago, Ill.

DESKS (School.)

Andrews Co., A. H., Chicago, Ill.

(Steel Factory.)

Angle Steel Stool Co., Plainwell, Mich.

DIFFUSERS.

Swenson Evaporator Co., Harvey, Ill.

DIGESTERS. (Welded.)

Swenson Evaporator Co., Harvey, Ill.

DITCHING MACHINERY.

Barber-Green Co., Aurora, Ill.
Bay City Shovels, Inc., Bay City, Mich.
Buckeye Traction Ditcher Co., Findlay, O.
Harnischfeger Corp., Milwaukee, Wis.
Hayward Co., The, New York, N. Y.
Industrial Brownhoist Corp., Cleveland, O.
Northwest Engineering Co., Chicago, Ill.
Ohio Power Shovel Co., Lima, Ohio.
Owen Bucket Co., The, Cleveland, O.

DOORS (Fire.)

Merchant & Evans Co., Philadelphia, Pa.

Richards-Wilcox Mfg. Co., Aurora, Ill.

(Fireproof, Air Chamber.)

Wilson Corp., The J. G., New York.

(Freight Elevator.)

Peelle Co., The, Brooklyn, N. Y.

(Kalamazoo.)

Moesch-Elliott Co., Cincinnati.

(Rolling, Steel and Wood.)

Kinnear Mfg. Co., The, Columbus, Ohio.

Mahon Co., R. C., Detroit, Mich.

Moesch-Elliott Co., Cincinnati.

Peelle Co., The, Brooklyn, N. Y.

Wilson Corp., The J. G., New York.

(Steel.)

Detroit Steel Products Co., Detroit, Mich.

Truscon Steel Co., Youngstown, O.

(Tubular Steel.)

Bayley Co., Wm., Springfield, O.

DRAFTSMEN'S SUPPLIES.

Weber Co., Inc., F., Philadelphia, Pa.

DRAGLINE EXCAVATORS.

Austin Machinery Corp., Muskegon, Mich.

Bucyrus-Erie Co., Erie, Penna.

Harnischfeger Corp., Milwaukee, Wis.

Monighan Mfg. Corp., Chicago, Ill.

National Equipment Corp. (Koehring, Inc.), Milwaukee, Wis.

Northwest Engineering Co., Chicago, Ill.

Ohio Power Shovel Co., Chicago, Ill.

—

General Equipment Corp. (Koehring, Inc.), Milwaukee, Wis.

Northwest Engineering Co., Chicago, Ill.

—

General Electric Co., Chicago.

—

General Electric Co., Hoboken, N. J.

—

General Electric Co., Hoboken,

**POLES
TIES
POSTS
PILING
CROSS
ARMS
CROSS
TIRES
LUMBER**

The most satisfactory way to eliminate annoying replacements and expense is to use permanently protected building lumber—properly seasoned lumber treated by Creosote or ZMA. ZMA treated lumber retains its natural color and can be painted. It will not bleed or leach. Ideal for interior finishes.

A request to our engineers will bring to you complete data on Creosote or ZMA treatment.

WOOD PRESERVERS **EPPINGER & RUSSELL CO.** SINCE 1878
13 PARK PLACE, NEW YORK CITY
Plants—Jacksonville, Fla., and Long Island City, N. Y.

Creosoted Ties, Piling, Poles and Timbers**Creosote Oil****Docks for Ocean Vessels****American Creosote Works, Inc.**
New Orleans, La.**Savannah Creosoting Co., Inc.**
Savannah, Ga.**Atlantic Creosoting Co., Inc.**
Norfolk, Va.**CREOSOTED****PINE AND OAK****POLES - PILES - TIES - TIMBERS****TREATING PLANTS AND YARDS**
BROWNVILLE, ALA.

LOUISVILLE, KY.

BROWN WOOD PRESERVING CO.
LOUISVILLE, KY.**WALES WOOD-PRESERVING COMPANY****INCORPORATED***Treated and Untreated***PILING, POLES, CROSS TIES, MINE AND**
STRUCTURAL TIMBERS**DOUGLAS FIR AND CALIFORNIA REDWOOD**

P. O. Box 615 Norfolk, Va.

**CREOSOTED TIMBERS***for all purposes*POLES POSTS PILING BEAMS
CROSS TIES BRIDGE MEMBERS MINE SHORING*Send for Catalogue***Taylor-Colquitt Company**
Spartanburg - - - South Carolina**AYER & LORD TIE CO.****INCORPORATED****Railway Exchange**
CHICAGO**Railroad Cross
Ties—Timber
Products—
Lumber—Poles****Piling—Fence
Posts
Wood Treatments
and Preservation****PLANTS**Carbondale, Ill., Grenada, Miss., Louisville, Ky.,
North Little Rock, Ark., Montgomery, Ala.;
Marine Ways-Paducah, Ky.**"CREOSOTE OIL PREVENTS DECAY"****Gulf States Creosoting Co.****PLANTS AT**HATTIESBURG, MISS., MERIDIAN, MISS., JACKSON, MISS.,
SLIDELL, LA., BRUNSWICK, GA., BIRMINGHAM, ALA.**Main Office: HATTIESBURG, MISS.****CREOSOTED MATERIAL****INCLUDING**Lumber, Timbers, Piles, Telephone and
Telegraph Poles and Cross-Arms,
Cross-Ties, Etc.

We also treat with Zinc Meta-Arsenite (colorless)

NASHVILLE HARDWOOD FLOORING CO.

NASHVILLE, TENNESSEE

*Manufacturers of***"ACORN BRAND"**
OAK, MAPLE and BEECH FLOORING
Capacity 100,000 feet per dayBranch Warehouse: JACKSONVILLE, FLORIDA
Union Terminal Warehouse BuildingWE are the sole and only manufacturers of the machine
known under the trade name and trade mark
"CEMENT GUN"Let us aid you by giving you full information how your new
construction or repair is made with this machine and its product**GUNITE***Experience Has Taught Us All Best Methods***CEMENT GUN CO., INC., Allentown, Penna.**

—(Dams.) Alpaugh & Sons, Chas. W., Manassas, Va. Battley & Kipp, Inc., Chicago, Ill. Bylesby Engineering and Management Corp., Chicago, Ill. Cooper & Co., Hugh L., New York, N. Y. Floyd & Lochrige, Dallas, Texas. Gardner & Howe, Memphis, Tenn. Hardaway Contracting Co., Columbus, Ga. Harza Engineering Co., Chicago. Harza Inc., Ira G., Hot Springs Nat'l. Park, Ark. Lee, William S., Charlotte, N. C. Main, Inc., Chas. T., Boston, Mass. Surrine & Co., J. E., Greenville, S. C. Tucker & Laxton, Charlotte, N. C. Wheeler, Walter H., Minneapolis, Minn. White Engr. Corp., J. G., New York.

—(Drainage and Irrigation.) Floyd & Lochrige, Dallas, Texas. Ford, Bacon & Davis, Inc., New York. Fuller & McClintock, New York, N. Y. Hills Co., George B., Jacksonville, Fla. Ludlow Engineers, Winston-Salem, N. C.

—(Efficiency.) Barstow & Co., W. S., Reading, Pa. Ernst & Ernst, New York, N. Y.

—(Electrical.) Battley & Kipp, Inc., Chicago, Ill. Cooper & Co., Hugh L., New York, N. Y. Engineering Service Corp., Houston, Texas. Hoosier Engineering Co., Chicago, Ill. Lee, William S., Charlotte, N. C. Lockwood Greene Engrs., Inc., New York City. Main, Inc., Chas. T., Boston, Mass. Mullergruen, Arthur L., Kansas City, Mo. Sanderson & Porter, New York, N. Y. Stone & Webster, Inc., Boston, Mass. Tucker & Laxton, Charlotte, N. C. Webb Electric Co., Anderson, S. C. White Co., Gilbert C., Durham, N. C. Wiley & Wilson, Lynchburg, Va.

—(Electric-Light and Power Plants.) Battley & Kipp, Inc., Chicago, Ill. Ford, Bacon & Davis, Inc., New York. Lee, William S., Charlotte, N. C. Main, Inc., Chas. T., Boston, Mass. Mullergruen, Arthur L., Kansas City, Mo. Sanderson & Porter, New York, N. Y. Stone & Webster, Inc., Boston, Mass. Tucker & Laxton, Charlotte, N. C. White Engineering Corp., J. G., New York. White Co., Gilbert C., Durham, N. C.

—(Flood Control.) Floyd & Lochrige, Dallas, Texas. Harza Engineering Co., Chicago.

—(Gas.) Bylesby Engineering and Management Corp., Chicago, Ill. Ford, Bacon & Davis, Inc., New York. Harrison, William Henry, Washington, D. C.

—(Geological.) De Kalb, Courtenay, New York City. Froehling & Robertson, Richmond, Va. Harrison, William Henry, Washington, D. C. Wadleigh & Bailey, Washington, D. C.

—(Harbor Improvements.) Billingsley, James W., New Orleans, La. Engineering Service Corp., Houston, Texas. Fay, Spofford & Thorndike, Boston, Mass.

—(Heating.) Battley & Kipp, Inc., Chicago, Ill. Biggs Eng. Co., W. E., Knoxville, Tenn. Wiley & Wilson, Lynchburg, Va.

—(Hydraulic.) Alpaugh & Sons, Chas. W., Manassas, Va. Barrows, H. K., Boston, Mass. Floyd & Lochrige, Dallas, Texas. Fuller & McClintock, New York, N. Y. Harza Engineering Co., Chicago. Main, Inc., Chas. T., Boston, Mass.

—(Hydro-electric.) Alpaugh & Sons, Chas. W., Manassas, Va. Barrows, H. K., Boston, Mass. Battley & Kipp, Inc., Chicago, Ill. Bylesby Engineering & Management Corp., Chicago, Ill. Cooper & Co., Hugh L., New York, N. Y. Harza Engineering Co., Chicago. Lee, William S., Charlotte, N. C. Ludlow Engineers, Winston-Salem, N. C. Main, Inc., Chas. T., Boston, Mass. Mees & Mees, Charlotte, N. C. Platt, William M., Durham, N. C. Sanderson & Porter, New York, N. Y. Scofield Engineering Co., Phila., Pa. Surrine & Co., J. E., Greenville, S. C. Tucker & Laxton, Charlotte, N. C. White Engineering Corp., J. G., New York.

—(Ice and Refrigerating.) Engineering Service Corp., Houston, Texas. Ophuls & Hill, Inc., New York, N. Y.

—(Industrial Plants.) Barstow & Co., W. S., Reading, Pa. Battley & Kipp, Inc., Chicago, Ill. Biggs Eng. Co., W. E., Knoxville, Tenn. Billingsley, James W., New Orleans, La. Charleston Constructors, Inc., Charleston, S. C. Consoer, Older & Quinlan, Inc., Chicago. Converse & Co., J. B., Mobile, Ala. Fay, Spofford & Thorndike, Boston, Mass. Gardner & Howe, Memphis, Tenn. Greiner & Co., J. E., Baltimore, Md.

Herty, Charles H., New York City. Hills Co., George B., Jacksonville, Fla. Lockwood Greene Engrs., Inc., New York City. MacElwee & Crandall, Inc., Cambridge, Mass. Main, Inc., Chas. T., Boston, Mass. Mees & Mees, Charlotte, N. C. Morgan Constr. Co., Worcester, Mass. Mullergruen, Arthur L., Kansas City, Mo. Ophuls & Hill, Inc., New York, N. Y. Preacher & Co., Inc., G. Lloyd, Atlanta. Sanderson & Porter, New York, N. Y. Scofield Engineering Co., Phila., Pa. Simons, Inc., & Associates, B. Stanley, Washington, D. C. Surrine & Co., J. E., Greenville, S. C. Smith, Elroy G., Augusta, Ga. Stone & Webster, Inc., Boston, Mass. Turner, C. A. P., Minneapolis, Minn. Widmer Engineering Co., St. Louis, Mo. Williamson, Lee H., Charlottesville, Va.

—(Industrial Survey.) Converse & Co., J. B., Mobile, Ala. Herty, Charles H., New York City. Lockwood Greene Engrs., Inc., New York City. Wadleigh & Bailey, Washington, D. C.

—(Inspection and Tests.) Barrow-Ages Laboratories, Memphis, Tenn. Consoer & Buzby, Burlington, N. J. Dow & Smith, New York, N. Y. Flood & Co., Walter H., Chicago, Ill. Freshing & Robertson, Inc., Richmond, Va.

Hunt Co., Robert W., Chicago, Ill. Picard Laboratories, Birmingham, Ala. Pittsburgh Testing Laboratories, Pittsburgh, Pa. Southwestern Laboratories, Ft. Worth, Texas.

—(Landscapes.) Draper, E. S., Charlotte, N. C. Kirby & Co., Raleigh, N. C. McCrady Co., John, Charleston, S. C.

—(Lighting.) Battley & Kipp, Inc., Chicago, Ill. Bylesby Engineering & Management Corp., Chicago, Ill. Ford, Bacon & Davis, Inc., New York. General Electric Vapor Lamp Co., Hoboken, N. J. Wiley & Wilson, Lynchburg, Va.

—(Mechanical.) Battley & Kipp, Inc., Chicago, Ill. Charlton & Davis, Ft. Lauderdale, Fla. Engineering Service Corp., Houston, Texas. Invicta Engineering Co., Birmingham, Ala. Lee, William S., Charlotte, N. C. Lockwood Greene Engrs., Inc., New York City.

Main, Inc., Chas. T., Boston, Mass. Mees & Mees, Charlotte, N. C. Meigs, Bassett & Slaughter, Phila., Pa. Sanderson & Porter, New York, N. Y. Wiley & Wilson, Lynchburg, Va.

—(Mining. See Engineers, Geological.)

—(Municipal.) Billingsley, James W., New Orleans, La. Consoer, Older & Quinlan, Inc., Chicago. Dow & Smith, New York, N. Y. Freeland, Roberts & Co., Nashville, Tenn. Harrub Eng. Co., C. N., Nashville, Tenn. Hills Co., George B., Jacksonville, Fla. Howerton Engineering Co., Asheville, N. C. Knowles, Inc., Morris, Pittsburgh, Pa. Ludlow Engineers, Winston-Salem, N. C. McCrady Co., The J. B., Atlanta, Ga. Spoon & Lewis, Greensboro, N. C. White Co., Gilbert C., Durham, N. C.

—(Paving and Roads.) Billingsley, James W., New Orleans, La. Dow & Smith, New York, N. Y. Freeland, Roberts & Co., Nashville, Tenn. Harrub Eng. Co., C. N., Nashville, Tenn. Howerton Engineering Co., Asheville, N. C. Knowles, Inc., Morris, Pittsburgh, Pa. Ludlow Engineers, Winston-Salem, N. C. McCrady Co., The J. B., Atlanta, Ga. Spoon & Lewis, Greensboro, N. C. White Co., Gilbert C., Durham, N. C.

—(Production.) Scofield Engr. Co., Phila., Pa.

—(Public Service Properties.) Bylesby Engineering & Management Corp., Chicago, Ill. Cooper & Co., Hugh L., New York, N. Y. Ford, Bacon & Davis, Inc., New York. Fuller & McClintock, New York, N. Y. Knowles, Inc., Morris, Pittsburgh, Pa. Main, Inc., Chas. T., Boston, Mass. Sanderson & Porter, New York, N. Y. Scofield Engineering Co., Phila., Pa. Stone & Webster, Inc., Boston, Mass. White Engineering Corp., J. G., New York.

—(Railroad.) Jenny, L. Alfred, Dumont, N. J. Mees & Mees, Charlotte, N. C.

—(Reinforced Concrete Bridges, Buildings, etc.) Atlantic Bridge Co., Greensboro, N. C. Battley & Kipp, Inc., Chicago, Ill. Fay, Spofford & Thorndike, Boston, Mass. Freeland, Roberts & Co., Nashville, Tenn. Gardner & Howe, Memphis, Tenn. Greiner & Co., J. E., Baltimore, Md. Lockwood Greene Engrs., Inc., New York City.

Main, Inc., Chas. T., Boston, Mass. Steel & Leiby, Knoxville, Tenn. Tucker & Laxton, Charlotte, N. C. Turner, C. A. P., Minneapolis, Minn. Wheeler, Walter H., Minneapolis, Minn.

—(Research and Development.) Invicta Engineering Co., Birmingham, Ala.

—(Sanitary.) Harza Engineering Co., Chicago.

—(Sewage Disposal Plants.) Fuller & McClintock, New York, N. Y. Kaustine Co., Inc., Perry, N. Y. Ludlow Engineers, Winston-Salem, N. C. McCrary Co., The J. B., Atlanta, Ga. Platt, William M., Durham, N. C. Wiedeman & Singleton, Inc., Atlanta.

—(Sewerage and Waterworks.) Barrows, H. K., Boston, Mass. Consoer, Older & Quinlan, Inc., Chicago. Ford, Bacon & Davis, Inc., New York. Fuller & McClintock, New York, N. Y. Hardaway Contracting Co., Columbus, Ga. Harrub Eng. Co., C. N., Nashville, Tenn. Hills Co., George B., Jacksonville, Fla. Howerton Engineering Co., Asheville, N. C. Knowles, Inc., Morris, Pittsburgh, Pa. Ludlow Engineers, Winston-Salem, N. C. Mees & Mees, Charlotte, N. C. Platt, William M., Durham, N. C. Spoon & Lewis, Greensboro, N. C. Tucker & Laxton, Charlotte, N. C. White Co., Gilbert C., Durham, N. C. White Engineering Corp., J. G., New York.

—(Structural.) Freeland, Roberts & Co., Nashville, Tenn. Hedrick, Inc., Ira G., Hot Springs Nat'l. Park, Ark.

Hill Company, Geo. B., Jacksonville, Fla. Lockwood Greene Engrs., Inc., New York City.

Simmons, Inc., & Associates, B. Stanley, Washington, D. C.

Turner, C. A. P., Minneapolis, Minn. Virginia Bridge & Iron Co., Roanoke, Va.

—(Textile Mills.) Lockwood Greene, Engrs., Inc., New York City.

Main, Inc., Chas. T., Boston, Mass. Surrine & Co., J. E., Greenville, S. C.

—(Transmission Lines.) Hoosier Engineering Co., Chicago, Ill.

—(Ventilating and Heating.) Biggs Eng. Co., W. E., Knoxville, Tenn. Wiley & Wilson, Lynchburg, Va.

—(Water Supply.) Floyd & Lochrige, Dallas, Texas.

—(Engineering.)

—(Fencing.) Ayer & Lord Tie Co., Chicago, Ill.

—(Felt (Building Sheathing.) Barrett Co., The, New York, N. Y.

—(Fence Posts (Creosoted.) Floyd & Lochrige, Dallas, Texas.

—(Fencing.) Entrance Gates (Iron, Steel and Wire.) American Steel and Wire Co., Balto., Md. Anchor Post Fence Co., Baltimore, Md. Cyclone Fence Co., Waukegan, Ill. Page Fence Association, Chicago, Ill. Stewart Iron Works Co., Cincinnati, O.

—(Field and Industrial, Wire Woven.) American Steel and Wire Co., Balto., Md. Anchor Post Fence Co., Baltimore, Md. Cyclone Fence Co., Waukegan, Ill. Gulf States Steel Co., Birmingham, Ala. Page Fence Association, Chicago, Ill. Stewart Iron Works Co., Cincinnati, O.

—(Fertilizer Machinery.) Raymond Bros., Impact Pulv. Co., Chicago.

—(Filter (For Domestic and Industrial Purposes.) American Water Softener Co., Phila., Pa. International Filter Co., Chicago, Ill. Rees, S. P., Atlanta. Roberts Filter Mfg. Co., Darby (Phil.), Pa. Seale & Sons Co., Wm. B., Oakmont, Pa.

—(Financing.) Akers, William, Atlanta, Ga. Electric Bond & Share Co., New York. Equitable Trust Co., New York City. Garaway & Co., S. O., Chicago. Gay & Co., W. O., New York, N. Y. Marr & Co., Birmingham, Ala.

—(Fire Clay.) Alabama Clay Products Co., Birmingham. Cambria Clay Products Co., Blackford, O.

—(Fire Extinguishers.) Myers & Bro. Co., The F. E., Ashland, O.

—(Fireproof Building Material.) Bannon Pipe Co., Louisville, Ky. Robertson Co., H. H., Pittsburgh.

—(Doors and Shutters.) Kinnar Mfg. Co., The, Columbus, Ohio. Mahon Co., B. C., Detroit, Mich. Moeschl-Edwards Corp. Co., Cincinnati, O. Richards-Wilcox Mfg. Co., Aurora, Ill.

—(Fireproofing Material and Construction.) Peele Co., The, Brooklyn, N. Y.

—(Fittings (Wire Rope.) Lesches & Sons Rope Co., A., St. Louis.

—(Flanges (Iron and Steel.) Amer. Cast Iron Pipe Co., Birmingham. Dart Mfg. Co., E. M., Providence, R. I.

NATIONAL Cast Iron Pipe Co., Birmingham, Ala.
Taylor Forge & Pipe Wks., Chicago, Ill.
U. S. Pipe & Foundry Co., Burlington, N. J.
Vogt Mch Co., Henry, Louisville, Ky.
—**and Flanged Fittings.**
Grinnell Co., Inc., Providence, R. I.

FLOOR (Asphalt Mastic.)
Barber Asphalt Co., Philadelphia, Pa.
—**(Asphalt Plank.)**
Servicized Premoulded Products, Inc., Chicago, Ill.
—**(Composition.)**
Johns-Manville Corp., New York, N. Y.
—**(Cork Composition.)**
Congoleum-Nairn, Inc., Kearny, N. J.
—**(Hardwood, Maple, Oak.)**
Kirby Lumber Co., Houston, Tex.
Nashville Hardwood Flooring Co., Nashville, Tenn.
—**(Northern Hard Maple.)**
Holt Hardwood Co., Oconto, Wis.
—**(Open Steel.)**
Blaw-Knox Co., Pittsburgh, Pa.
Irving Iron Works Co., Long Is. City, N. Y.
Kerlow Steel Flooring Co., Jersey City, N. J.
—**(Rubber and Cork.)**
Congoleum-Nairn, Inc., Kearny, N. J.
—**Covering.**
Congoleum-Nairn, Inc., Kearny, N. J.
—**Hardeners (Concrete.)**
Ronneborn Sons, Inc., L. New York
Stanhard Co., Phila., Pa.
—**Plates and Stair Treads.**
American Pressed Steel Co., Phila., Pa.
Central Iron & Steel Co., Harrisburg, Pa.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
—**Steel (For Concrete Culverts, Roads, Streets.)**
Blaw-Knox Co., Pittsburgh, Pa.
—**Wax.**
Congoleum-Nairn, Inc., Kearny, N. J.
—**(Wood) Preservative.**
Stanhard Co., Phila., Pa.

PLUSH-TANK SIPHONS.
Kaustine Co., Inc., Perry, N. Y.
Pacific Plush-Tank Co., New York, N. Y.

FLYER PRESSERS.
Southern Spindle & Flyer Co., Charlotte, N. C.

FLYERS.
Southern Spindle & Flyer Co., Charlotte, N. C.

FORGINGS (Drop.)
Vogt Mch. Co., Henry, Louisville, Ky.

FORMS, Steel (For Concrete, Culverts, Roads, Streets, Curbs, Sidewalks, Tiles.)
Blaw-Knox Co., Pittsburgh, Pa.

FOUNDATION MASONRY.
Calligan Co., A. H., Richmond, Va.

FOUNDRIES and Machine Shops.
Deemer Steel Casting Co., New Castle, Del.
General Machine Works, York, Pa.
Glamorgan Pipe & Fdry. Co., Lynchburg, Va.
Goldens' Fdry. & Mch. Co., Columbus, Ga.
Lombard Iron Works & Supply Co., Augusta, Ga.
Moecasin Bushing Co., Chattanooga, Tenn.

FOUNDRY Equipment and Supplies.
Chain Belt Co., Milwaukee, Wis.
Hill & Griffith Co., The, Cincinnati, O.
—**Facings (Tale and Soapstone.)**
Hill & Griffith Co., The, Cincinnati, O.

FUMIGATORS (Fruit, Nuts, Nursey Stock, etc.)
Union Tank & Pipe Co., Los Angeles, Cal.

FURNACES (Industrial.)
Combustion Engr., Corp., New York City.
—**(Water-Cooled.)**
Combustion Engr. Corp., New York City.
Fuller Lehigh Co., Fullerton, Pa.

GALVANIZED Products.
Birmingham Galvanizing Co., Birmingham, Ala.
Cattle & Bros., Jos. P., Philadelphia, Pa.
—**Steel and Iron.**
American Rolling Mill Co., Middletown, O.

American Sheet & Tin Plate Co., Pittsburgh, Pa.
Granite City Steel Co., Granite City, Ill.
Republic Steel Corp., Youngstown, Ohio.

GALVANIZING (Cadmium Plating.)
Birmingham Galvanizing Co., Birmingham, Ala.
—**(Hot Dip.)**
Bessemer Galvanizing Works, Birmingham.
Birmingham Galvanizing Co., Birmingham, Ala.
Cattle & Bros., Jos. P., Philadelphia, Pa.
Newport News Shipbuilding & Drydock Co., Newport News, Va.

GARAGES (Metal.)
Maryland Metal Building Co., Balt., Md.

GARBAGE DISPOSAL SYSTEMS
Sealsell Corp., New York, N. Y.

GAS HOLDERS.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Atlanta, Ga.
—**Producers.**
Gas-O-Flame Stove Works, Port Deposit, Md.
Morgan Construction Co., Worcester, Mass.
Wood & Co., R. D., Philadelphia, Pa.

GASOLINE and KEROSENE.
Gulf Refining Co., Pittsburgh, Pa.

GASOLINE SHOVELS (See Shovels.)

GATES (Automatic Drainage.)
Armes Culvert Mfrs. Assn., Middletown, O.
Dixie Culvert & Metal Co., Atlanta, Ga.
Dixie Culvert Mfr. Co., Little Rock, Ark.
Louisiana Corp. Culvert Co., Baton Rouge, La.
Tenn. Metal Culvert Co., Nashville, Tenn.
Western Metal Mfg. Co., Houston, Texas.

GAUGE GLASSES.
Jenkins Bros., New York, N. Y.

GEARS.
DeLaval Steam Turbine Co., Trenton, N. J.
Earle Gear & Machine Co., Phila., Pa.
General Electric Co., Schenectady, N. Y.
—**(Worm Reduction.)**
DeLaval Steam Turbine Co., Trenton, N. J.

GENERATORS, MOTORS (New.)
Allis-Chalmers Mfg. Co., Milwaukee, Wis.
General Electric Co., Schenectady, N. Y.
Howell Electric Motors Co., Howell, Mich.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.
Wisconsin Motor Co., Milwaukee, Wis.
—**(Used.)**
Belyea Co., Inc., New York City.
Electrical Equip. Co., Raleigh, N. C.
Gregory Electric Co., Chicago.
Nashville Ind. Corp., Old Hickory, Tenn.
Nussbaum & Co., V. M., Ft. Wayne, Ind.
O'Brien Machinery Co., Phila., Pa.
Randle Machinery Co., The, Cincinnati, O.
Stewart Elec. Co., John A., Cincinnati.

GEOLOGISTS (See Engineers, Geological.)

GLASS (Art.)
Binswanger & Co., Memphis, Tenn.
Hires Turner Glass Co., Philadelphia, Pa.
—**(Plate.)**
Binswanger & Co., Inc., Memphis, Tenn.
Blue Ridge Glass Corp., Kingsport, Tenn.
Hires Turner Glass Co., Philadelphia, Pa.
—**(Window.)**
Blue Ridge Glass Corp., Kingsport, Tenn.
Hires Turner Glass Co., Philadelphia, Pa.
—**(Wire.)**
Blue Ridge Glass Corp., Kingsport, Tenn.
Hires Turner Glass Co., Phila., Pa.

GRADERS (Elevating.)
Adams Co., J. D., Indianapolis, Ind.
Caterpillar Tractor Co., San Leandro, Calif.
—**(Leaning Wheel Road.)**
Adams Co., J. D., Indianapolis, Ind.
—**(One Man Motor.)**
Adams Co., J. D., Indianapolis, Ind.
Riddell Co., W. A., Bucyrus, Ohio.

GRAPHITE.
Dixon Crucible Co., Jos., Jersey City, N. J.

GRATES and Grate Bars.
Schofield's Sons Co., J. S., Macon, Ga.
Vogt Machine Co., Henry, Louisville, Ky.

GRATING (Area, Flooring, Sidewalks.)
Bates Steel Corp., Walter, Gray, Ind.
Blaw-Knox Co., Pittsburgh, Pa.
Hendrick Mfg. Co., Carbondale, Pa.
Irving Iron Works, Long Is. City, N. Y.
Kerlow Steel Flooring Co., Jersey City, N. J.

GRAVEL (Roofing and Road.)
American Limestone Co., Knoxville, Tenn.
Arundel Corp., The, Baltimore, Md.
Boley & Co., W. W., Roanoke, Va.
Friend & Co., Inc., Petersburg, Va.

GREASE CUPS.
Lunkenheimer Co., The, Cincinnati, O.

GRILLES (Brass, Bronze, Steel, etc.)
Manhattan Perforated Metal Co., Inc., Long Island City, N. Y.

GRINDERS (Cylinder.)
Hutto Engineering Co., Detroit, Mich.
—**(Electric.)**
Chicago Pneumatic Tool Co., New York.
—**(Gypsum, Limestone, etc.)**
Raymond Bros. Impact Pulv. Co., Chicago.

GRINDING MACHINERY (Flexible Shaft.)
Hutto Engineering Co., Detroit, Mich.
Strand & Co., N. A., Chicago, Ill.
—**Wheels.**
Carborundum Co., Niagara Falls, N. Y.

GUARD RAIL (Road.)
National Traffic Guard Co., Atlanta.

GUNITE CONSTRUCTION.
Cement-Gun Co., Inc., Allentown, Pa.
Cement Gun Construction Co., Chicago.
Gunite Conc. & Constr. Co., Kansas City.
Gunite Constr. Co., New York City.
Rust Engineering Co., Birmingham, Ala.

GUNPOWDER.
Du Pont de Nemours & Co., Inc., E. L., Wilmington, Del.
Hercules Powder Co., Inc., Wilmington, Del.

GUNS (Hydraulic.)
Georgia Iron Works, Augusta, Ga.

HANGARS (Airplane.)
Blaw-Knox Co., Pittsburgh, Pa.
Braden Steel Corp., Tulsa, Okla.
Ingraham Iron Works, Birmingham, Ala.
Maryland Metal Bldg. Co., Balt., Md.

HANGERS (Door, All Kinds.)
Richards-Wilcox Mfg. Co., Aurora, Ill.
—**(Line Shaft.)**
American Pulley Co., Philadelphia, Pa.
Wood's Sons Co., T. B., Chambersburg, Pa.

HARBOR IMPROVEMENTS.
Arundel Corp., Baltimore, Md.
Atlantic, Gulf & Pacific Co., New York.

HARDWARE (Door.)
Richards-Wilcox Mfg. Co., Aurora, Ill.

HEATERS (Asphalt.)
Honhorst Co., Jos., Cincinnati, O.

HEATING APPARATUS (Engineers and Contractors.)
Grinnell Co., Inc., Providence, R. I.
Skinner Bros. Mfg. Co., St. Louis, Mo.
—**Systems.**
Clarage Fan Co., Kalamazoo, Mich.
Skinner Bros. Mfg. Co., St. Louis, Mo.

HOISTING MACHINERY.
Clyde Iron Works Sales Co., Duluth, Minn.

HOISTS (Air Portable.)
Ingersoll-Rand Co., New York, N. Y.
Sullivan Machinery Co., Chicago, Ill.
—**(Chain.)**
Harrington Co., The, Philadelphia, Pa.
—**(Electric.)**
Clyde Iron Works Sales Co., Duluth, Minn.
Harnischfeger Corp., Milwaukee, Wis.
Milwaukee Elec. Crane & Hoist Corp., Milwaukee, Wis.
Mundy Hoisting Engine Co., J. S., Newark, N. J.
Novo Engine Co., Lansing, Mich.
O. K. Clutch & Mch. Co., Columbia, Pa.
Street Bros. Mch. Wks., Chattanooga, Tenn.
—**(Gasoline.)**
Clyde Iron Works Sales Co., Duluth, Minn.

IRON.
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.
—**(Ingots, For Culverts, etc.)**
American Rolling Mill Co., Middletown, O.

JOINTS (Pipe.)
Leadits Co., The, Philadelphia, Pa.

JOIST HANGERS.

Duplex Hanger Co., Cleveland, Ohio.

KETTLES (Pavers and Roofers.)

Honhorst Co., Jos., Cincinnati, O.

LADDERS (Rolling.)

Myers & Bro. Co., The F. E., Ashland, O.

—(Wooden.)

Dayton Safety Ladder Co., Cincinnati, O.

Patent Scaffolding Co., Chicago, Ill.

LAMPS (Incandescent.)

General Electric Vapor Lamp Co., Hoboken, N. J.

Western Electric Co., New York City.

LATH (Metal.)

Ingalls Iron Works Co., Birmingham, Ala.

LATHES.

Sebastian Lathe Co., Cincinnati, Ohio.

LAWN FURNITURE (Wire.)

Dufur, Baggott & Co., Baltimore, Md.

LIGHTING (Factory and Mill.)

General Electric Vapor Lamp Co., Hoboken, N. J.

—Fixtures (Electric.)

Western Electric Co., New York City.

LIME RECOVERY SYSTEMS.

Swenson Evaporator Co., Harvey, Ill.

LININGS (Flue, Fire Clay.)

Lee Clay Products Co., Clearfield, Ky.

Owensboro Sewer Pipe Co., Owensboro, Ky.

—(Tube Mill.)

Fuller Lehigh Co., Fullerton, Pa.

LINOLEUM (Battleship, Jasper.)

Cengoleum-Nairn, Inc., Kearny, N. J.

LITHOGRAPHERS and ENGRAVERS.

Smith & Son Co., Oscar T., Baltimore, Md.

Young & Soden Co., Baltimore, Md.

LOADING and UNLOADING MACHINERY (Portable.)

Barber-Greene Co., Aurora, Ill.

Northwest Engineering Co., Chicago, Ill.

LOCOMOTIVES (Compressed Air.)

Porter Co., H. K., Pittsburgh, Pa.

—(Electric.)

Cincinnati Car Corp. (Locomotive Div.), Cincinnati, Ohio.

—(Fireless Stored Steam.)

Porter Co., H. K., Pittsburgh, Pa.

—(Gasoline.)

Cincinnati Car Corp. (Locomotive Div.), Cincinnati, Ohio.

Porter Co., H. K., Pittsburgh, Pa.

Whitecomb Co., Geo. D., Rochelle, Ill.

—(Industrial.)

Birmingham Rail & Locomotive Co., Birmingham, Ala.

Cincinnati Car Corp. (Locomotive Div.), Cincinnati, Ohio.

Porter Co., H. K., Pittsburgh, Pa.

Southern Iron & Equipment Co., Atlanta.

Whitecomb Co., Geo. D., Rochelle, Ill.

—(Mining.)

Cincinnati Car Corp. (Locomotive Div.), Cincinnati, Ohio.

Porter Co., H. K., Pittsburgh, Pa.

Whitecomb Co., Geo. D., Rochelle, Ill.

—(Railway.)

Cincinnati Car Corp. (Locomotive Div.), Cincinnati, Ohio.

Porter Co., H. K., Pittsburgh, Pa.

Southern Iron & Equipment Co., Atlanta.

Whitecomb Co., Geo. D., Rochelle, Ill.

LOGGING MACHINERY.

Clyde Iron Works Sales Co., Duluth, Minn.

LOOM PICK COUNTER

Weed-Root, Inc., Hartford, Conn.

LUBRICANTS.

Dixon Crucible Co., Jos., Jersey City, N. J.

Gulf Refining Co., Pittsburgh, Pa.

LUBRICATORS, (Force Feed.)

Lunkenheimer Co., The, Cincinnati, O.

LUBRICATION SYSTEMS.

Alemite Corp., Chicago, Ill.

LUMBER (Ceiling, Flooring, Siding.)

Industrial Lumber Co., Elizabeth, La.

Kirby Lumber Co., Houston, Texas.

—(Creosoted.)

Amer. Creosote Wks., Inc., New Orleans, La.

Amer. Creosoting Co., Inc., Louisville, Ky.

Ayer & Lord Tie Co., Inc., Chicago.

Carolina Wood Preserving Co., Charleston, S. C.

Delaware Wood Preserving Co., Phila.

Eppinger & Russell Co., New York, N. Y.

Gulf State Creos. Co., Hattiesburg, Miss.

Savannah Creos. Co., Savannah, Ga.

—(Heavy Construction, Pitch, Pine, etc.)

Industrial Lumber Co., Elizabeth, La.

Kirby Lumber Co., Houston, Texas.

—(Zinc Meta Arsenite Treated.)

Curtin-Howe Corp., New York City.

MACHINERY (Special.)

Bliss Co., E. W., Brooklyn, N. Y.

Erie Gear & Machine Co., Phila., Pa.

Fernholz Machinery Co., St. Louis, Mo.

General Machine Works, York, Pa.

—and Supplies (New and Used.)

Beatty Machine & Mfg. Co., Hammond, Ind.

Belyea Co., Inc., New York City.

Dempster Equip. Co., Knoxville, Tenn.

Electric Service Co., Cincinnati, Ohio.

Equip. Sales & Rentals Co., Pittsburgh.

Heineken Engineering Corp., New York.

Marine Metal & Supply Co., New York.

Nashville Ind. Corp., Old Hickory, Tenn.

O'Brien Machinery Co., The Phila., Pa.

Randie Machinery Co., The Cincinnati, O.

Ryerson & Son, Inc., Jos. T., St. Louis

and New York.

Seyfert's Sons, Inc., L. F., Phila., Pa.

Zelnicker Supply Co., W. A., St. Louis.

MACHINE TENDERS (Steel.)

Angle Steel Stool Co., Plainwell, Mich.

—(Tools.)

Ryerson & Son, Inc., Jos. T., St. Louis

and New York.

Sebastian Lathe Co., Cincinnati, Ohio.

—(Used.)

Delta Equipment Co., Philadelphia, Pa.

O'Brien Machinery Co., Phila., Pa.

MAIL CHUTES.

Cutler Mail Chute Co., Rochester, N. Y.

MARBLE (Producers and Manufacturers.)

Georgia Marble Co., Tate, Ga.

MATERIAL ELEVATORS.

National Equipment Corp., (Insley, C. H. & E.), Milwaukee, Wis.

METAL-Cutting Machinery.

Atkins & Co., E. C., Indianapolis, Ind.

Earle Gear & Machine Co., Phila., Pa.

—Working Machinery.

Bliss Co., E. W., Brooklyn, N. Y.

MILL MACHINERY and SUPPLIES.

Lombard Iron Works & Supply Co., Augusta, Ga.

MINING MACHINERY.

McLanahan-Stone Machine Co., Hollidaysburg, Pa.

MIXERS.

National Equipment Corp. (Koehring, T. L. Smith, Kwik-Mix), Milwaukee, Wis.

—(Asphalt.)

Eric Machine Shops, Eric, Pa.

—(Hot.)

Koehring Co., Milwaukee, Wis.

—(Plaster.)

Blystone Mfg. Co., Cambridge Springs, Pa.

Chain Belt Co., Milwaukee, Wis.

Dunning & Buschert Press Co., Syracuse, N. Y.

Jaeger Machine Co., Columbus, Ohio.

MORTAR MIXERS.

Chain Belt Co., Milwaukee, Wis.

Jaeger Machine Co., Columbus, Ohio.

—Ingredient.

Louisville Cement Co., Louisville, Ky.

MOTORS (Electric.)

Fairbanks, Morse & Co., Chicago, Ill.

General Electric Co., Schenectady, N. Y.

Howell Electric Motors Co., Howell, Mich.

Western Electric Co., New York City.

Westinghouse Elec. & Mfg. Co., E. Pitts-

burgh, Pa.

—(Gasoline.)

Wisconsin Motor Co., Milwaukee, Wis.

MOTOR TRUCKS.

International Harvester Co., of America, Inc., Chicago, Ill.

NAILS (Cut.)

Reading Iron Co., Reading, Pa.

PHOSPHATE ACID.

Davison Chemical Co., Baltimore, Md.

—(Machinery.)

McLanahan-Stone Machine Co., Hollidays-

burg, Pa.

PETROLEUM REFINERS.

Gulf Refining Co., Pittsburgh, Pa.

PITCH.

Barrett Co., The, New York, N. Y.

PLANERS and Mortisers (Hand and Electric.)

Wappat, Incorporated, Pittsburgh, Pa.

—and Spikes.

American Steel & Wire Co., Balto., Md.

Gulf States Steel Co., Birmingham, Ala.

Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.

Youngstown Sheet & Tube Co., Youngs-

town, Ohio.

NATURAL GAS COMPANIES.**(Offering Industrial and Commercial Opportunities.)**

Arkansas Natural Gas Corp., Shreveport, La.

OIL (Fuel and Gas.)

Gulf Refining Co., Pittsburgh, Pa.

—Cups.

Lunkenheimer Co., The, Cincinnati, O.

ORE-WASHING MACHINERY.

Georgia Iron Works, Augusta, Ga.

McLanahan-Stone Machine Co., Hollidays-

burg, Pa.

ORNAMENTAL BRONZE WORK.

Heath Co., J. S., Waukegan, Ill.

—IRON WORK.

Roanoke Iron & Bridge Wks., Roanoke,

Va.

Snead Architectural Iron Works, Louis-

ville, Ky.

Southern Engineering Co., Charlotte, N. C.

Stewart Iron Works Co., Cincinnati, O.

PACKING (Asbestos, Metallic, Rubber, Leather, etc.)

Jenkins Bros., New York, N. Y.

Johns-Manville Corp., New York, N. Y.

Republie Rubber Co., Youngstown, Ohio.

PAINT (Aluminum.)

Aluminum Co. of America, Pittsburgh, Pa.

—(Metal Surfaces.)

Aluminum Co. of America, Pittsburgh, Pa.

Dixon Crucible Co., Jos., Jersey City, N. J.

PAINT ATTORNEYS.

Buck, Sterling P., Washington, D. C.

Coleman, Watson E., Washington, D. C.

Eaton, Paul B., Charlotte, N. C.

Sassett, Edward C., Washington, D. C.

Seymour & Bright, Washington, D. C.

PATENT ATTORNEYS.

Buck, Sterling P., Washington, D. C.

Coleman, Watson E., Washington, D. C.

Eaton, Paul B., Charlotte, N. C.

Sassett, Edward C., Washington, D. C.

Seymour & Bright, Washington, D. C.

PATTERNS (Drawing, etc.)

Hass Pattern Co., A. W., Atlanta, Ga.

PAVING Blocks (Creosoted Wood.)

American Creosots Wks., New Orleans.

—Blocks (Rubber.)

Servicized Tremoulded Products, Inc., Chicago, Ill.

—Mixers.

National Equipment Corp. (Koehring, T. L. Smith), Milwaukee, Wis.

—Plant (Asphalt.)

Simplicity System Co., Chattanooga, Tenn.

PENSTOCKS.

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Chicago Bridge & Iron Works, Atlanta.

Pittsburgh-Des Moines Steel Co., Pitts-

burgh, Pa.

Smith Co., S. Morgan, York, Pa.

PERFORATED METAL.

Chicago Perforating Co., Chicago, Ill.

Erdie Perforating Co., Rochester, N. Y.

Harrington & King Perf. Co., Chicago.

Hendrick Mfg. Co., Carbondale, Pa.

Manhattan Perforated Metal Co., Inc.

Long Island City, N. Y.

Mundt & Sons, Charles, Jersey City, N. J.

Nortmann-Duffie Co., Milwaukee, Wis.

PERFORATED METAL.

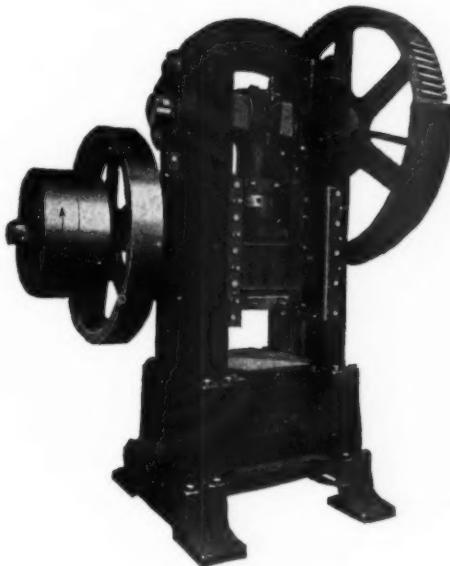
Chicago Perforating Co., Chicago, Ill.

Erdie Perforating Co., Rochester, N. Y.

Harrington & King Perf. Co.,

BLISS

For economy
in sheet metal operations



Straight Side Presses

Sheet metal automobile parts, heavy hardware, agricultural implements, tractors, electrical instruments, cutlery, etc., can be turned out with a high degree of precision and economy by the aid of Bliss Straight Side Presses. This type of press is also adapted to light embossing work and the trimming of hot or cold forgings.

The Bliss Straight Side Press is built in a wide variety of arrangements so as to meet given operating requirements exactly. It can be furnished with flywheel, single, double, or triple geared, single or twin drive, cut back or straight side frame, special slide width and length, etc.

There is a Bliss Press that meets *your* requirements exactly. Let us check your sheet metal operations and explain the advantages of Bliss equipment in your plant.

SINCE
1857

BLISS for MACHINERY

E. W. BLISS CO., BROOKLYN, N. Y., U. S. A.

Factories: Brooklyn, N. Y. Hastings, Mich. Salem, Ohio

Sales Offices: Detroit Cleveland Chicago Boston Philadelphia

Cincinnati New Haven Rochester

Foreign Factories and Offices: London, Eng. Turin, Italy Paris, France



POWER—PICK-UP MILEAGE

400° F END POINT
ANTI-KNOCK

AT NO EXTRA COST

GULF NO-NOX MOTOR
FUEL is Aviation Grade
374° F. End Point.

At the Sign of the Orange Disc

GULF REFINING CO.

Beatty Equipment



Vertical Bulldozer

BEATTY PUNCHES AND SHEARS

Builders of Punches, Single and Double "C" Frame; Horizontal Punches; Multiple Punches; Gate Shears; Splitting Shears; Bar Shears; Angle Shears; Coping Machines; The CoPunShear (Cope Punch Shear); Vertical Bulldozers; Hammond NeverSlip Floor Cranes; Spacing Tables.

*We have in stock for quick delivery a large list
of good rebuilt Punches and Shears. Let us know
your requirements.*

BEATTY MACHINE & MANUFACTURING CO.
HAMMOND, IND.

PLATES (Steel.)

Bethlehem Steel Co., Bethlehem, Pa.
Carnegie Steel Co., Pittsburgh, Pa.
Cleveland Iron & Steel Co., Harrisburg, Pa.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Granite City Steel Co., Granite City, Ill.
Ryerson & Son, Inc., Jos. T., St. Louis and New York.
Tennessee Coal, Iron & Railroad Co., Birmingham.

PNEUMATIC TOOLS.

Chicago Pneumatic Tool Co., New York.
Ingersoll-Rand Co., New York, N. Y.

POLES (Creosoted.)

Amer. Creosote Wks., Inc., New Orleans.
Amer. Creoseting Co., Inc., Louisville, Ky.
Ayer & Lord Tie Co., Inc., Chicago.
Brown Wood Preserving Co., Louisville, Ky.
Caroline Wood Preserving Co., Charleston, S. C.
Savannah Creoseting Co., Savannah, Ga.
Taylor-Colquitt Co., Spartanburg, S. C.
(Steel.)
Bates Steel Corp., Walter, Gray, Ind.
(Tubular, Steel.)
National Tube Co., Pittsburgh, Pa.
(Zinc Meta Arsenite Treated.)
Curtin-Howe Corp., New York City.

POLISHING MACHINERY.

(Wheels, Blocks.)
Carborundum Co., Niagara Falls, N. Y.

PORTABLE HOUSES (Metal.)

Brader Steel Corp., Tulsa, Okla.
Maryland Metal Building Co., Baltimore, Md.

POST CAPS.

Duplex Hanger Co., Cleveland, Ohio.

POSTS (Cast Iron, Railway and Highway.)

U. S. Pipe & Foundry Co., Burlington, N. J.

POWER TRANSMISSION MACHINERY.

American Pulley Co., Philadelphia, Pa.
Diamond Chain & Mfg. Co., Indianapolis.
Golden's Fdry. & Mfg. Co., Columbus, Ga.
Morse Chain Co., Ithaca, N. Y.
O'Brien Machinery Co., Phila., Pa.
Schofield's Sons Co., J. S., Macon, Ga.
Wood's Sons Co., T. B., Chambersburg, Pa.
(Pumps.)
Luitwiler Pumping Engine Co., Rochester, N. Y.

PREHEATERS (Air.)

Combustion Engr. Corp., New York City

PRESSES, (Boiling, Cottonseed Oil, Hydraulic and Power.)

Dunning & Boschert Press Co., Inc., Syracuse, N. Y.
Ripley Foundry & Machine Co., Ripley, O.
(Hydraulic Wheel.)
Inter-State Fdry. & Mach. Wks., Johnson City, Tenn.

Metal Stamping.)

Bliss Co., E. W., Brooklyn, N. Y.

PRINTERS (Book, Catalog, Job.)

Smith & Son Co., Oscar T., Baltimore, Md.
Young & Soden Co., Baltimore, Md.

PRODUCER (Gas Machines.)

Gas-O-Fame Stove Works, Port Deposit, Md.
Morgan Construction Co., Worcester, Mass.
Wood & Co., B. D., Phila., Pa.

PULLER-JACKS.

Edelblute Co., T. H., Pittsburgh, Pa.

PULLEYS (Friction Clutch.)

Caldwell Co., Inc., W. E., Louisville, Ky.
Schultz & Son, A. L., Chicago, Ill.
Wood's Sons Co., T. B., Chambersburg, Pa.
(Motor and Machine.)
American Pulley Co., Philadelphia, Pa.
(Steel Split.)
American Pulley Co., Phila., Pa.
Shafting and Hangers.
American Pulley Co., Phila., Pa.
Goldens' Fdry. & Mfg. Co., Columbus, Ga.
Wood's Sons Co., T. B., Chambersburg, Pa.

PULVERIZED FUEL EQUIPMENT.

Combustion Engr. Corp., New York City.
Fuller Lehigh Co., Fullerton, Pa.

PULVERIZERS (See Crushing and Pulverizing Machinery.)

PUMPING MACHINERY.
American Well Works, Aurora, Ill.
Cameron, A. S., Steam Pump Works (Ingersoll-Rand Co.), New York City.

CHAIN BELT CO., Milwaukee, Wis.

Cook, Inc., A. D., Lawrenceburg, Ind.
Fairbanks, Morse & Co., Chicago, Ill.

Ingersoll-Rand Co. (A. S. Cameron Steam Pump Works), New York, N. Y.

Keystone Pump & Drill Co., Beaver Falls, Pa.

Luitwiler Pumping Engine Co., Rochester, N. Y.

Myers & Bro. Co., The F. E., Ashland, Ohio.

National Equipment Corp. (C. H. & E. Division), Milwaukee, Wis.

Platt Iron Works, Dayton, Ohio.

Viking Pump Co., Cedar Falls, Iowa.

Virginia Mch. & Well Co., Richmond, Va.

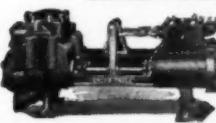
Wright & Co., Milwaukee, Wis.

**RoTURBO CENTRIFUGAL
PUMPS**

Manistee Iron Works Co., Manistee, Michigan

PLATT IRON WORKS - DAYTON, OHIO.

Smith-Vaile **PLATT** Pumps



Steam and Power
Pumping Machinery

AN ERIE

Extraordinary feats are accomplished with this
DRAINAGE PUMP
Speed is adjusted to suit conditions. Pumps furnished belted or directly connected.

ERIE PUMP & ENGINE WORKS
154 Glenwood Ave. Medina, N. Y.

ARTESIAN WELLS

ANY SIZE ANY DEPTH
DRILLED ANYWHERE

VIRGINIA MACHINERY & WELL COMPANY, Inc.
Dept. M. R. RICHMOND, VA

**TRADE MARK
DOWNIE**

**DEEP
WELL
PUMPS**

Single and Double Stroke
Any Drive—

KEYSTONE PUMP & DRILL CO.
Beaver Falls Pennsylvania

SAND PUMPS

A wide range of types in sizes 4" to 15"
For belt drive and for direct connection to motor
Illustrated booklet on request

GEORGIA IRON WORKS
AUGUSTA, GA.

**COOK
DEEP-WELL
TURBINE**

SELF-OILING-WEATHERPROOF

This is the Pump YOU have been hoping for ---

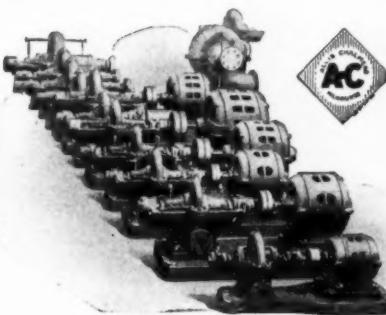
Foolproof — Trouble-proof
Compact
Sturdy
Efficient
Adaptable

BULLETIN — 36

A. D. COOK, Inc.
Lawrenceburg—Indiana

Patent Applied for

Pumps you need not worry about



Consider your pumping problems carefully once for all and specify "Allis-Chalmers Combined Centrifugal Pumping Units." You can then practically forget this part of your equipment as purchasers of our pump tell us they go on from year to year taking care of their requirements with a minimum of attention and upkeep expense.

Write for Bulletin 1632-F

ALLIS-CHALMERS
MILWAUKEE, WIS. U. S. A.

Myers SELF-OILING Power Pumps

When a Myers Self-Oiling Power Pump is installed, there is a satisfaction in knowing that the water supply will be uniform and that the operation and maintenance costs will be cut to the minimum. Twelve sizes, operation any power, meet most requirements in domestic, agricultural, commercial and industrial fields. No. PP-61 catalog mailed, if interested.

The F. E. MYERS & BROS. CO.
ASHLAND, OHIO
Ashland Pump and Hay Tool Works

**VIKING
PUMPS**

Viking has helped to solve thousands of pumping problems. The fact that more than 150,000 Viking pumps are in use is sufficient evidence of that. Viking simplicity of construction and dependability of performance makes it a favorite wherever pumping is an essential operation. Get the Viking facts first. Send for our new catalog NOW.

Viking Pump Company
Cedar Falls, Iowa Walkerville, Ontario, Canada

—(Textile.) American Kron Scale Co., New York City.

SCHOOLS (Correspondence.) International Correspondence Schools, Scranton, Pa.

SCOOOPS (Hand.) American Mfg. Co., Chattanooga, Tenn. —Wheeled. Riddell Co., W. A., Bucyrus, Ohio.

SCRAPERS (Drag and Wheel.) Adams Co., J. D., Indianapolis, Ind. Austin-Western Road Mchry. Co., Chicago. Sauer Bros., Chicago, Ill.

SCRAP IRON AND STEEL. Hunts Sons, M. J., Philadelphia, Pa. Perry, Buxton, Deane Co., Philadelphia. Smith & Co., W. M., Birmingham, Ala.

SCREENING (For Concrete and Road Construction.) American Limestone Co., Knoxville, Tenn.

SCREENS (Sand, Gravel, Stone, Coal, Ore, etc.) Chicago Perforating Co., Chicago, Ill. Erdle Perforating Co., Rochester, N. Y. Hendrick Mfg. Co., Carbondale, Pa. Ludlow Taylor Wire Co., The St. Louis, Mo. McLanahan-Stone Machine Co., Hollidaysburg, Pa. Muntz & Sons, Charles, Jersey City, N. J. Normann-Durke Co., Milwaukee, Wis. Stephens-Adams Mfg. Co., Birmingham, Ala. Universal Crusher Co., Cedar Rapids, Iowa.

SCREW-Machine Products. Progressive Mfg. Co., Torrington, Conn.

SCREWS (Machine.) Progressive Mfg. Co., Torrington, Conn.

SEAWALLS. Shore-Line Builders, Inc., Jacksonville, Fla.

SEPARATORS (Dust.) Raymond Bros., Impact Pulv. Co., Chicago.

SEPTIC TANKS. Kaustine Co., Inc., Perry, N. Y.

SEWAGE Disposal Apparatus. Kaustine Co., Inc., Perry, N. Y. Pacific Flush-Tank Co., New York, N. Y.

SEWER Joint Compounds. Pacific Flush-Tank Co., New York, N. Y. Serviced Premoulded Products, Inc., Chicago, Ill. —Pipe (Vitrified.) Bannon Pipe Co., Louisville, Ky. Cambrian Clay Products Co., Blackfert, O. Des Co., Wm. E., Oak Hill, Ohio. Lee Clay Products Co., Clearfield, Ky. Owensboro Sewer Pipe Co., Owensboro, Ky.

SHADES (Offset.) Hough Shade Corp., Chicago, Ill.

SHAFTING. Ryerson & Sons, Inc., Jos. T., St. Louis and New York. —(Cold Rolled.) Bliss & Laughlin, Inc., Harvey, Ill. —(Flexible.) Strand & Co., N. A., Chicago, Ill. —Material (Tubular.) National Tube Co., Pittsburgh, Pa.

SHARPENING Stones. Carborundum Co., Niagara Falls, N. Y.

SHEET Metal Work. National Blow Pipe & Mfg. Co., Ltd., New Orleans, La. Skinner Bros. Mfg. Co., St. Louis, Mo. —Metal Working Machinery. Bliss Co., E. W., Brooklyn, N. Y. Whitney Metal Tool Co., Rockford, Ill. Yoder Co., The, Cleveland, Ohio. —Steel and Iron. American Rolling Mill Co., Middletown, O. American Sheet and Tin Plate Co., Pittsburgh, Pa. Bethlehem Steel Co., Bethlehem, Pa. Granite City Steel Co., Granite City, Ill. Republic Steel Corp., Youngstown, Ohio. Ryerson & Son, Inc., Jos. T., St. Louis and New York. Tennessee Coal, Iron & Railroad Co., Birmingham, Ala. Youngstown Sheet & Tube Co., Youngstown, O.

SHEETS (Asbestos.) Ambler Asbestos Shingle & Sheathing Co., Ambler, Pa. Eternit, Inc., St. Louis, Mo.

—(Steel—Asbestos Covered.) Roberton Co., H. H., Pittsburgh, Pa.

SHELVING (Unit.) Lupton's Sons Co., David, Phila., Pa.

SHINGLES (Asbestos.) Ambler Asbestos Shingle & Sheathing Co., Ambler, Pa. Eternit, Inc., St. Louis, Mo.

—(Stain.) Cabot, Inc., Samuel, Boston, Mass.

SHOVELS (Hand.) American Mfg. Co., Chattanooga, Tenn. —(Steam, Gas and Electric Power.) Bucyrus-Erie Co., Erie, Penna. Harnischfeger Corp., Milwaukee, Wis. Industrial Brownhoist Corp., Cleveland, O. National Equipment Corp., (Koshing, Ingle), Milwaukee, Wis. Northwest Engineering Co., Chicago, Ill. Ohio Power Shovel Co., Lima, Ohio. The Shovel Co., The, Lorain, Ohio. Universal Power Shovel Co., Milwaukee, Wis.

SHUTTERS (Steel.) Merchant & Evans Co., Philadelphia, Pa. Peele Co., The, Brooklyn, N. Y.

—(Steel and Wood Bifolding.) Kinnear Mfg. Co., The, Columbus, Ohio.

SILICATE OF SODA. Grasselli Chemical Co., Inc., Birmingham, Ala.

SITES (Manufacturing.) Alabama Power Co., Birmingham, Ala. Arkansas Natural Gas Corp., Shreveport, La. Atlanta and West Point R. R., Atlanta. Brown & Co., Chattanooga, Tenn. Central of Georgia Hwy., Savannah, Ga. Central Power & Light Co., San Antonio, Galveston City, of Galveston, Texas. Georgia Power Co., Atlanta, Ga. Industrial Dallas, Inc., Dallas, Texas. Jacksonville City of Jacksonville, Florida. Missouri-Kansas-Texas Lines, Dallas, Texas. Missouri-Pacific Lines, St. Louis, Mo. Model Land Company, (Flagler System), St. Augustine, Fla. Norfolk & Western Railway, Roanoke, Va. Tennessee Central Railway, Nashville, Tenn. Texas Power & Light Co., Dallas, Texas.

SKYLIGHTS. Milwaukee Corrugating Co., Milwaukee, Wis. Robertson Co., H. H., Pittsburgh, Pa.

SLABS (Concrete Floor.) American Cement Tile Mfg. Co., Pittsburgh, Pa.

—(Concrete Roof.) American Cement Tile Mfg. Co., Pittsburgh, Pa.

SLAG, For Concrete. Sloss-Sheffield Steel and Iron Co., Birmingham, Ala. Woodstock Slag Corp., Birmingham, Ala.

—(Furnace.) Sloss-Sheffield Steel and Iron Co., Birmingham, Ala. Woodstock Slag Corp., Birmingham, Ala.

SLINGS (Chain.) Woodhouse Chain Works, Trenton, N. J.

—(Wire Rope.) Roebling's Sons Co., John A., Trenton, N. J.

SLUICE GATES AND APPLIANCES. Smith Co., S. Morgan, York, Pa.

SMELTERS. Swenson Evaporator Co., Harvey, Ill.

SNATCH BLOCKS (For Wire and Manila Rope.) Patterson Co., W. W., Pittsburgh.

SPADES. American Mfg. Co., Chattanooga, Tenn.

SPEED REDUCERS. Earle Gear & Mach. Co., Phila., Pa. Morse Chain Co., Itasca, N. Y. Stephens-Adamson Mfg. Co., Birmingham, Ala.

SPIKES, (Railroad, Ship.) Bethlehem Steel Co., Bethlehem, Pa. Republic Steel Corp., Youngstown, Ohio. Sweet's Steel Co., Williamsport, Pa.

SPRINGS (Machinery, Railway, Spiral Steel.) American Steel & Wire Co., Balto., Md. Raymond Mfg. Co., Corry, Pa.

—(Wire—All Kinds.) American Steel & Wire Co., Balto., Md.

SPRINKLERS (Automatic Fire.) Grinnell Co., Inc., Providence, R. I.

SPROCKETS. Diamond Chain & Mfg. Co., Indianapolis. Morse Chain Co., Ithaca, N. Y.

STACKS (Iron and Steel.) Biggs Boiler Works Co., Akron, Ohio. Chattanooga Boiler & Tank Co., Chattanooga, Tenn. Clark Bridge and Iron Works, Atlanta, Ga. Downington Iron Works, Downingtown, Pa. Hammond Iron Works, Warren, Pa. Hedges Walsh Welder Co., Chattanooga, Tenn. Inglis Iron Works Co., Birmingham, Ala. Lombard Iron Works & Supply Co., Augusta, Ga. Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa. Schield's Sons Co., J. S., Mason, Ga. U. S. Pipe & Foundry Co., Burlington, N. J. Virginia Bridge & Iron Co., Roanoke, Va.

STAINS (Shingle, Woodwork.) Cabot, Inc., Samuel, Boston, Mass.

STAIRS (Spiral.) Duvinson Spiral Stair Co., Hagerstown, Md.

STAIR Steps (Safety.) Irving Iron Works Co., Long Is. City, N. Y. —Treads. Bates Steel Corp., Walter, Gray, Ind. Central Iron & Steel Co., Harrisburg, Pa.

STAMPING (Sheet Metal.) American Pulley Co., Philadelphia, Pa.

—Steel (All Kinds.) Commercial Shearing & Stamping Co., Youngstown, Ohio.

STANDPIPES. Chattanooga Boiler & Tank Co., Chattanooga, Tenn. Chicago Bridge & Iron Works, Atlanta, Ga. Hammond Iron Works, Warren, Pa. Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

STATIONERS (Envelopes, Letter and Billheads, etc.) Smith & Son Co., Oscar T., Baltimore, Md. Young & Selden Co., Baltimore, Md.

STEAM SHOVELS. Bucyrus-Erie Co., Erie, Pa. The Shovel Co., The, Lorain, Ohio.

—Specialties. Jenkins Bros., New York, N. Y. Lunkelheimer Co., The, Cincinnati, O. Mueller Co., Decatur, Ill.

—Traps. Jenkins Bros., New York, N. Y.

STEEL. Bethlehem Steel Co., Bethlehem, Pa. Central Iron & Steel Co., Harrisburg, Pa. Crucible Steel Co., of Amer., New York City. District Brothers, Baltimore, Md. Gulf States Steel Co., Birmingham, Ala. Republic Steel Corp., Youngstown, Ohio. Ryerson & Son, Inc., Jos. T., St. Louis and New York. Tennessee Coal, Iron & Railroad Co., Birmingham, Ala. Virginia Bridge & Iron Co., Roanoke, Va.

—(Alloy.) Crucible Steel Co. of Amer., New York City. Timken Roller Bearing Co., Canton, Ohio.

—(Cold Drawn.) Bliss & Laughlin, Inc., Harvey, Ill.

—(Cold Rolled.) American Steel & Wire Co., Balto., Md. Bliss & Laughlin, Inc., Harvey, Ill.

—(Information Only.) American Institute of Steel Construction, Inc., New York City.

—(Liners for Sewers, Tunnels and Caissons.) Commercial Shearing & Stamping Co., Youngstown, O.

—(Special Analysis.) Timken Roller Bearing Co., Canton, Ohio.

—(Tool, High Speed.) Bethlehem Steel Co., Bethlehem, Pa. Crucible Steel Co. of Amer., New York City.

—Buildings (Designers and Builders.) American Bridge Co., New York, N. Y. Belmont Iron Works, Philadelphia, Pa. Braden Steel Corp., Tulsa, Okla. Butler Mfg. Co., Kansas City, Mo. Carolina Steel & Iron Co., Greensboro, N. C. Champion Bridge Co., Wilmington, O. Eliehley, Jr., Co., John, Pittsburgh.

—(Tool, High Speed.) Ingalls Iron Works Co., Birmingham, Ala. McClinic-Marshall Co., Pittsburgh, Pa. Phoenix Iron Co., The, Phila., Pa. Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa. Richmond Struc. Steel Co., Richmond, Va. Virginia Bridge & Iron Co., Roanoke, Va.

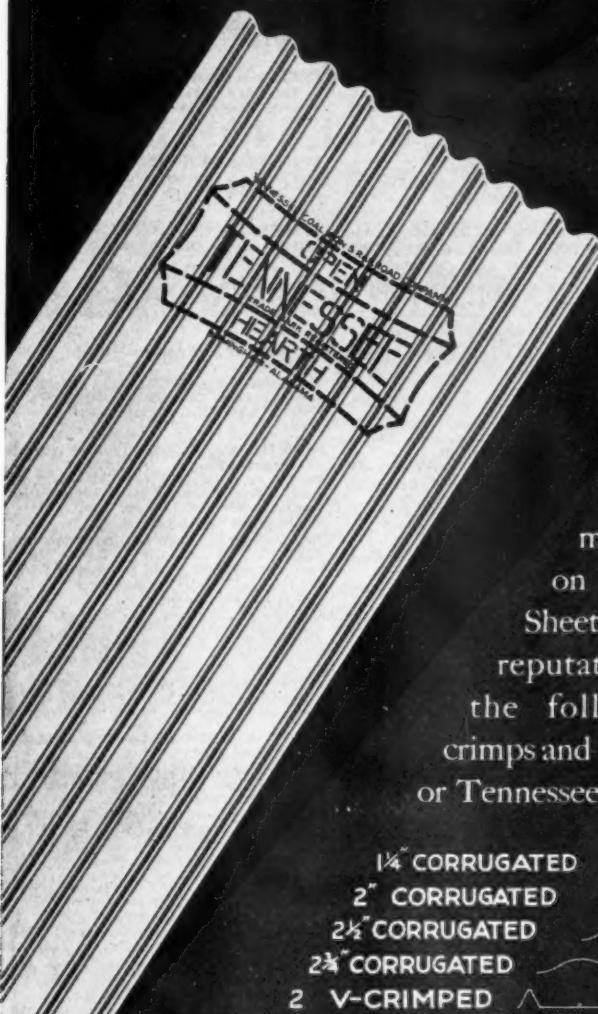
SWITCHBOARDS, SWITCHES, ETC. Adam Elec. Co., Frank, St. Louis. General Electric Co., Schenectady, N. Y. Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

SYSTEMS (Business.) Ernst & Ernst, New York, N. Y.

TACKLE BLOCKS (For Wire and Manila Rope.) Patterson Co., W. W., Pittsburgh.

TENNESSEE

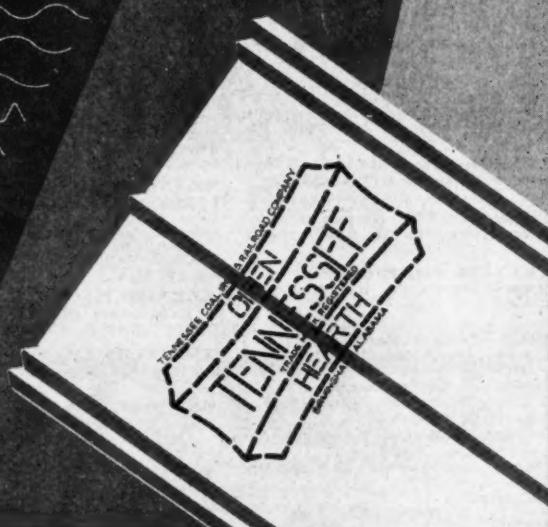
Galvanized Roofing and Siding



Produced on modern mills and manufactured with an emphasis on quality, Tennessee Galvanized Sheets have built up an enviable reputation. Can be furnished in the following corrugations and crimps and in Tennessee Open Hearth or Tennessee Copper Steel Quality—

- 1 $\frac{1}{4}$ " CORRUGATED
- 2" CORRUGATED
- 2 $\frac{1}{2}$ " CORRUGATED
- 2 $\frac{3}{4}$ " CORRUGATED
- 2 V-CRIMPED
- 3 V-CRIMPED
- 4 V-CRIMPED
- 5 V-CRIMPED
- 6 V-CRIMPED

WE ARE ALSO MANUFACTURERS OF BLUE ANNEALED, BLACK AND SPECIAL FINISH SHEETS



Tennessee Coal, Iron & Railroad Company

General Offices: Brown-Marx Building, BIRMINGHAM, ALA.

SUBSIDIARY OF UNITED STATES STEEL CORPORATION

AMERICAN BRIDGE COMPANY

AMERICAN SHEET AND TIN PLATE COMPANY

AMERICAN STEEL AND WIRE COMPANY

Pacific Coast Distributors—United States Steel Products Company, San Francisco, Los Angeles, Portland, Seattle, Honolulu. Export Distributors—United States Steel Products Company, New York City

PRINCIPAL SUBSIDIARY MANUFACTURING COMPANIES:

CARNEGIE STEEL COMPANY

CYCLONE FENCE COMPANY

FEDERAL SHIPBUILDING AND DRY DOCK COMPANY

ILLINOIS STEEL COMPANY

MINNESOTA STEEL COMPANY

NATIONAL TUBE COMPANY

THE LORAIN STEEL COMPANY

TENNESSEE COAL, IRON & R. R. COMPANY

UNIVERSAL PORTLAND CEMENT COMPANY

TANKS (Air Compressor.)
Air-Tight Steel Tank Co., Pittsburgh, Pa.

Sealife & Sons, Wm. B., Oakmont, Pa.
Titusville Iron Works Co., Titusville, Pa.

(Elevated Steel.)
Caldwell Co., Inc., W. E., Louisville, Ky.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Chicago Bridge & Iron Works, Atlanta, Ga.
Colo Mfg. Co., R. D., Newnan, Ga.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Schofield's Sons Co., J. S., Macon, Ga.
Virginia Bridge & Iron Co., Roanoke, Va.

(Elevated Wood.)
Caldwell Co., Inc., W. E., Louisville, Ky.
Davis & Son, G. M., Palatka, Fla.
Woolford Wood Tank Mfg. Co., G. Paschal P. O., Philadelphia.

(Iron and Steel.)
Air-Tight Steel Tank Co., Pittsburgh, Pa.
American Bridge Co., New York, N. Y.
Biggs Boiler Works Co., Akron, Ohio.
Birmingham Tank Co., Birmingham, Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Chicago Bridge & Iron Works, Atlanta, Ga.
Cole Mfg. Co., R. D., Newnan, Ga.
Downingtown Iron Works, Downingtown, Pa.

Hammond Iron Works, Warren, Pa.
Lombard Iron Works & Supply Co., Aurora, Ga.

McClintic-Marshall Co., Pittsburgh, Pa.
McKleinburg Iron Works, Charlotte, N. C.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Seale & Sons, Wm. B., Oakmont, Pa.
Schofield's Sons Co., J. S., Macon, Ga.
Titusville Iron Works Co., Titusville, Pa.
Virginia Bridge & Iron Co., Roanoke, Va.
Westinghouse Traction Brake Co., Wommerding, Pa.

(Seamless Steel.)
James, Jr., Jas. A., Phila., Pa.
National Tube Co., Pittsburgh, Pa.

(Storage, Oil, etc.)
Biggs Boiler Works, Akron, Ohio.
Birmingham Boiler & Engr. Co., Birmingham, Ala.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Chicago Bridge & Iron Works, Atlanta, Ga.
Downingtown Iron Works, Downingtown, Pa.

Hammond Iron Works, Warren, Pa.
Ingraham Iron Works Co., Birmingham, Ala.
McKleinburg Iron Works, Charlotte, N. C.
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Titusville Iron Works Co., Titusville, Pa.

(Wood.)
Caldwell Co., Inc., W. E., Louisville, Ky.
Davis & Son, G. M., Palatka, Fla.
Virginia Machy. & Well Co., Richmond, Va.

Woolford Wood Tank Mfg. Co., G. Paschal P. O., Philadelphia.

(Wood Pickling.)
Woolford Wood Tank Mfg. Co., G. Paschal P. O., Philadelphia.

TAPE (Insulating.)
Otonite Co., New York, N. Y.

(Measuring.)
Lufkin Rule Co., Saginaw, Mich.

TAX SPECIALISTS.
Ernst & Ernst, New York, N. Y.
Harrison, Wm. Henry, Washington, D. C.
Le Baron, Ernest T., Jacksonville, Fla.

TELEPHONE SERVICE.
American Telephone & Telegraph Co.

TERRA COTTA (Ornamental.)
Atlanta Terra Cotta Co., Atlanta, Ga.

TEXTILE CHEMICALS.
Grasselli Chemical Co., Inc., Birmingham, Ala.

TILE (Cement Roofing.)
American Cement Tile Mfg. Co., Pittsburgh, Pa.

(Cork Composition.)
Congoleum-Nairn, Inc., Kearny, N. J.

(Cork Flooring.)
Congoleum-Nairn, Inc., Kearny, N. J.

(Hollow Building.)
Cambria Clay Products Co., Blackford, Ohio.

(Roof.)
Hood Co., B. Mifflin, Daisy, Tenn.

(Rubber.)
Congoleum-Nairn, Inc., Kearny, N. J.

(Sewer.)
Lee Clay Products Co., Clearfield, Ky.

TIMBER Fittings.
Duplex Hanger Co., Cleveland, Ohio.

(Creosoted.)
Amer. Creosote Wks., Inc., New Orleans.
Amer. Creosoting Co., Inc., Louisville, Ky.
Carolina Wood Preserving Co., Charleston, S. C.

TIME Recorders.
Kaiser Klock Co., L. E., Baltimore, Md.

TIN AND TERNE PLATES.
American Sheet & Tin Plate Co., Pittsburgh, Pa.

Bethlehem Steel Co., Bethlehem, Pa.
Granite City Steel Co., Granite City, Ill.
Youngstown Sheet & Tube Co., Youngstown, Ohio.

TOBACCO MACHINERY.
Bipley Foundry & Machine Co., Ripley, O.

TOILET TISSUE.
Victoria Paper Mills Co., Fulton, N. Y.

TOOLS (Measuring.)
Lufkin Rule Co., Saginaw, Mich.

(Woodworking—Portable.)
Electric, Hand.)
Wappat, Incorporated, Pittsburgh, Pa.

TORCHES (Blow.)
Wall Mfg. Supply Co., P., Pittsburgh, Pa.

(Kerosene.)
St. Paul Welding & Mfg. Co., St. Paul, Minn.

TOWERS (Electric Transmission.)
American Bridge Co., New York, N. Y.
Rates Steel Corp., Walter, Gray, Ind.
Bessemer Galvanizing Works, Birmingham, Nashville Bridge Co., Nashville, Tenn.

(Radio.)
Bessemer Galv. Wks., Birmingham, Ala.
(Steel and Wood.)
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Cole Mfg. Co., R. D., Newnan, Ga.

TRACK (Portable or Permanent.)
Sweet's Steel Co., Williamsport, Pa.

TRACTORS (Industrial.)
Atlas Car & Mfg. Co., The, Cleveland, O.
Caterpillar Tractor Co., San Leandro, Cal.
Clark Tractor Co., Battle Creek, Mich.
Cleveland Tractor Co., Cleveland, Ohio.
International Harvester Co., of America, Inc., Chicago, Ill.

(Road.)
Caterpillar Tractor Co., San Leandro, Cal.
Cleveland Tractor Co., Cleveland, Ohio.
—Attachments (Side Boom.)
W-K-M Co., Inc., Houston, Texas.

TRAILERS. (Four Wheel.)
Electric Wheel Co., Quincy, Ill.

(Heavy Duty.)
Electric Wheel Co., Quincy, Ill.

(Industrial.)
Easton Car & Construction Co., Easton, Pa.

Electric Wheel Co., Quincy, Ill.

(Pole.)
Electric Wheel Co., Quincy, Ill.

TRAMWAYS (Aerial Wire Rope.)
American Steel & Wire Co., Balto., Md.

Broderick & Bascom Rope Co., St. Louis.
Lesches & Sons Rope Co., A., St. Louis.

TRANSFORMERS.
General Electric Co., Schenectady, N. Y.
Westinghouse Elec. & Mfg. Co., E. Pittsburgh, Pa.

(Used.)
Electric Service Co., Cincinnati, Ohio.

TRANSMISSION TOWERS (Galvanized.)
Bates Steel Corp., Walter, Gray, Ind.
Bessemer Galvanizing Works, Birmingham, Ala.
McClintic-Marshall Co., Pittsburgh, Pa.

TRENCH MACHINERY. See Excavators (Trench.)

TRESTLES (Wooden.)
Patent Scaffolding Co., Chicago, Ill.

TRI-SODIUM PHOSPHATE.
Grasselli Chemical Co., Inc., Birmingham, Ala.

TROLLEY WHEELS (Self Oiling.)
Moecasin Bushing Co., Chattanooga, Tenn.

TRUCK CRANES.
Universal Crane Co., Lorain, O.

TRUCKS (Dry Kiln.)
Moore Dry Kiln Co., Jacksonville, Fla.

(Industrial.)
Atlas Car & Mfg. Co., The, Cleveland, O.
Clark Tractor Co., Battle Creek, Mich.
Nutting Truck Co., Chicago, Ill.
Service Caster & Truck Co., Albion, Mich.

(Motor.)
International Harvester Co., of America, Inc., Chicago, Ill.

WATERPROOFING (For Brick, Concrete, Granite.)
Asphalt Products Co., Syracuse, N. Y.
Foster Co., Benjamin, Philadelphia, Pa.
Servicised Pre-moulded Products, Inc., Chicago, Ill.

WATER Purification.
Roberts Filter Mfg. Co., Darby (Phila.), Pa.

Seale & Sons, Wm. B., Oakmont, Pa.

(Softening Apparatus (Purifying.)
American Water Softener Co., Phila., Pa.
International Filter Co., Chicago, Ill.

—Works Supplies and Appliances.
Amer. Cast Iron Pipe Co., Birmingham.
Cast Iron Pipe Research Assn., Chicago.

WOOD (Preserved.)
Delaware Wood Preserving Co., Phila.

WOODWORKING MACHINERY.
Wappat, Incorporated, Pittsburgh, Pa.

ZINC CHLORIDE.
Grasselli Chemical Co., Inc., Birmingham, Ala.

ZINC META ARSENITE (Wood Preservative.)
Curtin-Howe Corp., New York City.
Gulf States Creos. Co., Hattiesburg, Miss.

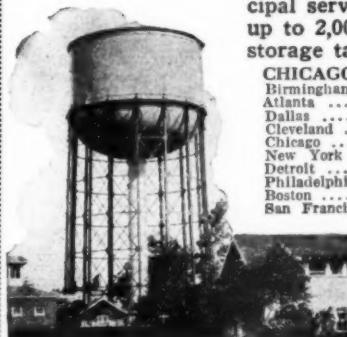
TANKS

BOILERS ENGINES
 BARGES DRYERS
 and MACHINERY
 BUILT TO ORDER

Write for Further Information

J. S. SCHOFIELD'S SONS CO.
 MACON, GA.

HORTON TANKS



Ellipsoidal-bottom tanks for municipal service, in standard capacities up to 2,000,000 gallons. Standpipes, storage tanks and steel plate work.

CHICAGO BRIDGE & IRON WORKS
 Birmingham 1530 Fiftieth St., North
 Atlanta 1314 Rhodes-Haverty Bldg.
 Dallas 3308 Magnolia Bldg.
 Cleveland 2216 Union Trust Bldg.
 Chicago 2106 Old Colony Bldg.
 New York 3113 Hudson Terminal
 Detroit 1510 Lafayette Bldg.
 Philadelphia 1619 Jefferson Bldg.
 Boston 1510 Consolidated Gas Bldg.
 San Francisco 1040 Rialto Bldg.

Ask for a copy
 of our booklet,
 Gravity Water
 Supply

• COLE •



500,000 Gallon Tank

erected for City of St. Petersburg, Fla. Cole tanks both in design and workmanship offer very distinctive advantages. They embody the most revised requirements of all insurance authorities.

♦ ♦ ♦

R. D. COLE MANUFACTURING CO.
 Established 1854

NEWNAN, GA.

New York Office,
 5 Beekman St.

SOUTHLAND
 PRODUCTS
 STAND PIPES
 SMOKE STACKS
 TOWERS and TANKS
 STEEL RIVETED
 PIPE

Chattanooga Boiler & Tank Co.
 CHATTANOOGA, TENN.
 82 Beaver St., New York City
 107-109 Kinney Bldg., Charlotte, N.C.
 TANKS

STEEL PLATE CONSTRUCTION

RIVETED AND WELDED PIPE, STACKS, AIR DUCTS
 BINS STEEL STORAGE TANKS LADLES

BIRMINGHAM BOILER & ENGINEERING CO.
 BIRMINGHAM, ALA.

MECKLENBURG IRON WORKS

Founded 1858

Consulting Engineers

Sheet and Plate Steel Construction Tanks — Water, Oil, Gasoline, Dye
 Smoke Stacks and Connections Boilers and Boiler Flues

CHARLOTTE, N. C.

AIR-TIGHT STEEL TANK CO.
 PITTSBURGH, PA.

TANKS FOR: High pressure gas and air storage—Pneumatic water systems—Gasoline and oil storage—Oil burning equipment—Open top—Welded. ATSCO Genuine Copper Brazed Tanks for high pressure — the tightest, safest, strongest tank it is possible to construct by any known process. ASME code tanks.

STEEL TANKS

ANY SIZE FOR ANY PURPOSE

PITTSBURGH-DES MOINES STEEL COMPANY

11 NEVILLE ISLAND • PITTSBURGH, PA.
 DES MOINES NEW YORK CHICAGO ATLANTA DALLAS SEATTLE SAN FRANCISCO



Biggs Welded or Riveted
 High Pressure Tanks,
 Vessels, Retorts, and Steel
 Plate Construction of
 every description. Write
 for folder shown at left.

THE BIGGS BOILER WORKS CO.
 Kent and Bank Streets, Akron, Ohio



Alphabetical Index of Advertisements

| | | | | | | |
|--|--|------------------------------|----------------------------|----------------------------|-----------------------------------|------|
| A | Blystone Mfg. Co. | 117 | Dempster Equip. Co. | 94 | Harnischfeger Corp. | 8-96 |
| | Boiler Tube Co. of America | 117 | Detroit Steel Products Co. | 16 | Harrington Co. | |
| A-471. | Bond, Geo. Harwell. | 21 | Diamond Chain & Mfg. Co. | 14 | Harrington & King Perforating Co. | † |
| Abendroth & Root Mfg. Co. | 19 | Dietrich Brothers. | 14 | Harrison, Wm. Henry. | 25 | |
| Acme Road Machinery Co. | 98 | Dixie Culvert & Metal Co. | 96 | Harrub Engr. Co., C. N. | 24 | |
| Adam Electric Co., Frank. | 11 | Dixie Culvert Mfrs. Asso. | 96 | Haras Engineering Co. | 24 | |
| Adams Co., J. D. | 11 | Dixon Crucible Co., Jos. | 1 | Hayward Co. | 95 | |
| Airmap Corp. of America | 24 | Dow & Smith. | 25 | Heath Co., J. S. | † | |
| Air-Tight Steel Tank Co. | 115 | Downington Iron Works. | 1 | Hedges Walsh Weidner Co. | † | |
| Akers, William. | 85 | Draper, E. S. | 24 | Hedrick, Ira G. | 24 | |
| Alabama Clay Products Co. | 4 | Dufur, Baggett & Co. | 16 | Heineken Engineering Corp. | 91 | |
| Alabama Power Co. | 4 | Dunning & Boschert Press Co. | 18 | Heiss Hotel System. | | |
| Albert & Davidson Pipe Corp. | 92 | Duplex Hanger Co. | 1 | Hendrick Mfg. Co. | 22 | |
| Albert Pipe Supply Co. | 92 | DuPont de Nemours & Co. | 1 | Hercules Powder Co. | 24 | |
| Alderson, A. D. | 57 | E ! | † | Herty, Chas. H. | 24 | |
| Alemite Corp. | 1 | Duvinage Spiral Stair Co. | 1 | Hill & Griffith Co. | † | |
| Allen-Sherman-Hoff Co. | 1 | | | Hills Co., George B. | | |
| Allis-Chalmers Mfg. Co. | 111 | | | Hires Turner Glass Co. | † | |
| Alpaugh & Sons, Chas. W. | 25 | | | Hitner's Sons, Henry A. | | |
| Alpha Portland Cement Corp. | 1 | | | Hollowell, Gorham & Co. | 26 | |
| Aluminum Co. of America. | 1 | | | Holt Hardwood Co. | | |
| Ambler Asbestos Shingle & Sheathing Co. | 1 | | | Honhorst Co., Jos. | 98 | |
| American Appraisal Co. | 1 | | | Hood Co., B. Mifflin. | 25 | |
| American Bridge Co. | 1 | | | Hoosier Engineering Co. | 25 | |
| American Cast Iron Pipe Co. | 19 | | | Hornbuckle Contracting Co. | 24 | |
| American Cement Tile Mfg. Co. | 2 | | | Hough Shade Corn. | † | |
| American Creosoting Works. | 105 | | | Howell Electric Motors Co. | | |
| American Creosoting Co. | 1 | | | Howerton Engineering Co. | 24 | |
| American Elevator & Machine Co. | 16 | | | Huber Mfg. Co. | 98 | |
| American Gas Association. | 28 | | | Hudson Pipe & Supply Co. | 92 | |
| American Hardware & Equip. Co. | 94 | | | Huey, S. E. | 24 | |
| American Institute of Steel Construction, Inc. | 1 | | | Hunt Co., Robert W. | 26 | |
| American Kron Scale Co. | 1 | | | Hunt's Sons, M. J. | 91 | |
| American Limestone Co. | 98 | | | Hutto Engineering Co. | † | |
| American Manufacturing Co. | 1 | | | Hyatt Roller Bearing Co. | 119 | |
| American Pipe Bending Machine Co. | 1 | | | | | |
| American Pressed Steel Co. | 98 | | | | | |
| American Press Co. | 1 | | | | | |
| American Putney Co. | 1 | | | | | |
| American Rolling Mill Co. | 1 | | | | | |
| American Sheet & Tin Plate Co. | 1 | | | | | |
| American Steel & Wire Co. | 1 | | | | | |
| American Steel Dredge Co. | 1 | | | | | |
| American Telephone & Telegraph Co. | 1 | | | | | |
| American Water Softener Co. | 1 | | | | | |
| American Well Works. | 1 | | | | | |
| Anchor Post Fence Co. | 1 | | | | | |
| Andrews Co., A. H. | 16 | | | | | |
| Angle-Blackford Co. | 25 | | | | | |
| Angle Steel Stool Co. | 16 | | | | | |
| Arkansas Natural Gas Corp. | 29 | | | | | |
| Armclo Culvert Mfrs. Asso. | 96 | | | | | |
| Arundel Corporation. | 96 | | | | | |
| Asphalt Products Company. | 17 | | | | | |
| Atkins & Co., E. C. | 1 | | | | | |
| Atlanta & West Point R. R. | 27 | | | | | |
| Atlanta Terra Cotta Co. | 18 | | | | | |
| Atlantic Bridge Co. | 14 | | | | | |
| Atlantic Creosoting Co. | 105 | | | | | |
| Atlantic, Gulf & Pacific Co. | 1 | | | | | |
| Atlas Car and Manufacturing Co. | 98 | | | | | |
| Austin Machinery Corp. | 97 | | | | | |
| Austin-Western Road Machy. Co. | 1 | | | | | |
| Ayer & Lord Tie Co. | 105 | | | | | |
| B | | | | | | |
| Babcock & Wilcox Co. | 4 | | | | | |
| Baltimore Belting Co. | 1 | | | | | |
| Baltimore Commercial Bank. | 85 | | | | | |
| Bank of Alabama. | 1 | | | | | |
| Bank of New York & Trust Co. | 1 | | | | | |
| Bannon Pipe Co. | 1 | | | | | |
| Barber Asphalt Co. | 1 | | | | | |
| Barber-Greene Co. | 1 | | | | | |
| Barrett Co. | 1 | | | | | |
| Barrow-Age Laboratories. | 25 | | | | | |
| Barrows, H. K. | 24 | | | | | |
| Barstow & Co., Inc., W. S. | 1 | | | | | |
| Bates Steel Corp., Walter. | 17 | | | | | |
| Battey & Kipp. | 26 | | | | | |
| Bay City Shovels, Inc. | 96 | | | | | |
| Bayley Co., Wm. | 1 | | | | | |
| Beatty Machine & Mfg. Co. | 109 | | | | | |
| Belmont Iron Works. | 15 | | | | | |
| Belyea Co., Inc. | 1 | | | | | |
| Bessemer Galvanizing Works. | 1 | | | | | |
| Bethlehem Steel Co. | 14 | | | | | |
| Biggs Boiler Wks. Co. | 115 | | | | | |
| Biggs Engineering Co., W. E. | 24 | | | | | |
| Billingsley, James W. | 25 | | | | | |
| Binswanger & Co. | 1 | | | | | |
| Birmingham Boiler & Engr. Co. | 115 | | | | | |
| Birmingham Galvanizing Co. | 1 | | | | | |
| Birmingham Rail & Loco. Co. | 93 | | | | | |
| Bituminous Earth Road Corp. | 96 | | | | | |
| Blair, Algernon. | 24 | | | | | |
| Blaw-Knox Co. | 1 | | | | | |
| Bliss & Lauglin, Inc. | 1 | | | | | |
| Bliss Co., E. W. | 109 | | | | | |
| Blue Ridge Glass Co. | 30-31 | | | | | |
| D | Dake Engine Co. | 1 | | | | |
| | Dame-Wolfe & Co. | 25 | | | | |
| | Dart Mfg. Co., E. M. | 1 | | | | |
| | Davis & Son, G. M. | 1 | | | | |
| | Davis Foundry & Machine Works. | 1 | | | | |
| | Davis-Paradise Watchman's Clock Corp. | 1 | | | | |
| | Davison Chemical Co. | 95 | | | | |
| | Day Pulverizer Co. | 1 | | | | |
| | Dayton Safety Ladder Co. | 1 | | | | |
| | Dee Co., Wm. E. | 1 | | | | |
| | Deemer Steel Casting Co. | 8 | | | | |
| | DeKalb, Courtenay. | 26 | | | | |
| | DeLaval Steam Turbine Co. | 1 | | | | |
| | Delaware Registration Trust Co. | 1 | | | | |
| | Delaware Wood Preserving Co. | 1 | | | | |
| | Delta Equipment Co. | 91 | | | | |
| C | Cabot, Inc., Samuel. | 1 | | | | |
| | Cahill Co., W. S. | 1 | | | | |
| | Caldwell Co., W. E. | 34 | | | | |
| | Calligan & Co., A. H. | 26 | | | | |
| | Cambrica Clay Products Co. | 19 | | | | |
| | Cameron Steam Pump Works, A. S. (Ingersoll-Rand Co.) | 1 | | | | |
| | Carborundum Co. | 1 | | | | |
| | Carnegie Steel Co. | 1 | | | | |
| | Carolina Steel & Iron Co. | 15 | | | | |
| | Carolina Wood Preserving Co. | 1 | | | | |
| | Cast Iron Pipe Research Asso. | 20 | | | | |
| | Caterpillar Tractor Co. | 1 | | | | |
| | Cattie & Bros., Joseph P. | 105 | | | | |
| | Cement-Gun Co. | 1 | | | | |
| | Cement Gun Constr. Co. | 14 | | | | |
| | Central Foundry Co. | 19 | | | | |
| | Central Iron & Steel Co. | 98 | | | | |
| | Central of Georgia Rwy. | 1 | | | | |
| | Central Pipe & Supply Co. | 92 | | | | |
| | Central Power & Light Co. | 1 | | | | |
| | Chain Belt Co. | 1 | | | | |
| | Champion Bridge Co. | 14 | | | | |
| | Charleston Constructors, Inc. | 1 | | | | |
| | Charleston Dry Dock & Mch. Co. | 4 | | | | |
| | Charlton & Davis. | 24 | | | | |
| | Charlotte Leather Belting Co. | 1 | | | | |
| | Chase Brass & Copper Co. | 1 | | | | |
| | Chase, William J. | 24 | | | | |
| | Chattanooga Boiler & Tank Co. | 115 | | | | |
| | Chicago Bridge & Iron Works. | 115 | | | | |
| | Chicago Perforating Co. | 22 | | | | |
| | Chicago Pneumatic Tool Co. | 1 | | | | |
| | Christian Co., J. R. | 1 | | | | |
| | Cincinnati Car Corp. | 95 | | | | |
| | Clark Tractor Co. | 1 | | | | |
| | Classified Opportunities. | 90-91 | | | | |
| | Cleveland Tractor Co. | 1 | | | | |
| | Clow & Sons, James B. | 1 | | | | |
| | Clyde Iron Works Sales Co. | 1 | | | | |
| | Cohen, Chas. F. | 93 | | | | |
| | Cole Mfg. Co., R. D. | 115 | | | | |
| | Colonial Creosoting Co. | 1 | | | | |
| | Combustion Engineering Corp. | 1 | | | | |
| | Commercial Shearing & Stamping Co. | 1 | | | | |
| | Conard & Busby. | 25 | | | | |
| | Congoleum-Nairn, Inc. | 1 | | | | |
| | Connors Steel Co. | 15 | | | | |
| | Consoer, Older & Quinlan. | 24 | | | | |
| | Continental Gin Co. | 1 | | | | |
| | Converse & Co., J. B. | 25 | | | | |
| | Converse Bridge & Steel Co. | 14 | | | | |
| | Cook, Inc., A. D. | 111 | | | | |
| | Cooper & Co., Hugh L. | 24 | | | | |
| | Copper & Brass Research Asso. | 1 | | | | |
| | Cornell-Young Co. | 26 | | | | |
| | Corporation Service Co. | 1 | | | | |
| | Crawbuck Co., John D. | 93 | | | | |
| | Crucible Steel Casting Co. | 8 | | | | |
| | Crucible Steel Co. of America. | 1 | | | | |
| | Curtin-Howe Corp. | 1 | | | | |
| | Cutter Mail Chute Co. | 16 | | | | |
| | Cyclone Fence Co. | 1 | | | | |
| G | Galveston, Texas, City of. | 1 | | | | |
| | Galveston Wharf Co. | 24 | | | | |
| | Gardner & Howe. | 1 | | | | |
| | Garraway & Co., S. G. | 1 | | | | |
| | Gay & Co., W. O. | 1 | | | | |
| | General Electric Co. | 6 | | | | |
| | General Electric Vapor Lamp Co. | 1 | | | | |
| | General Machine Works. | 1 | | | | |
| | Georgia Creosoting Co. | 1 | | | | |
| | Georgia Iron Works. | 111 | | | | |
| | Georgia Marble Co. | 18 | | | | |
| | Georgia Power Co. | 1 | | | | |
| | Glamorgan Pipe & Fdry. Co. | 10 | | | | |
| | Goldens Foundry & Machine Co. | 8 | | | | |
| | Gomes & Co., P. L. | 25 | | | | |
| | Granite City Steel Co. | 13 | | | | |
| | Grasselli Chemical Co. | 1 | | | | |
| | Greenpoint Iron & Pipe Co. | 92 | | | | |
| | Gregory Electric Co. | 93 | | | | |
| | Greiner & Co., J. E. | 24 | | | | |
| | Grey Steel Products Co. | 94 | | | | |
| | Gridley Constr. Co., Lee A. | 25 | | | | |
| | Grinnell Co., Inc. | 1 | | | | |
| | Gulf Refining Co. | 109 | | | | |
| | Gulf States Creosoting Co. | 105 | | | | |
| | Gulf States Steel Co. | 1 | | | | |
| | Gunite Concrete & Constr. Co. | 19 | | | | |
| | Gunite Construction Co. | 1 | | | | |
| H | Haas Pattern Co., A. W. | 1 | | | | |
| | Hammond Iron Works. | 1 | | | | |
| | Hanchett Bond Co. | 85 | | | | |
| | Harbison-Walker Refractories Co. | 4 | | | | |
| | Hardaway Contracting Co. | 25 | | | | |
| L | Lansing Co. | 1 | | | | |
| | Law & Co., A. M. | 1 | | | | |
| | Layne & Bowler, Inc. | 34 | | | | |
| | Leadite Co. | 1 | | | | |
| | Le Baron, E. T. | 25 | | | | |
| | Lee Clay Products Co. | 19 | | | | |
| | Lee Trailer & Body Co., Inc. | 1 | | | | |
| | Lee, William S. | 24 | | | | |
| | Leffel & Co., James. | 1 | | | | |
| | Lehigh Portland Cement Co. | 1 | | | | |
| | Leschen & Sons Rope Co., A. | 31 | | | | |
| | Levis & Co., Henry. | 94 | | | | |
| | Light Manufacturing & Foundry Co. | 1 | | | | |
| | Lindsay, Claude H. | 24 | | | | |
| | Lockwood Greene, Engrs. Inc. | 26 | | | | |
| | Lombard Iron Works & Supply Co. | 1 | | | | |
| | Louisville Corr. Culvert Co. | 96 | | | | |
| | Louisville Cement Co. | 1 | | | | |

| | | | | | |
|--|-------|--|-------------------------|---|----------------|
| Ludlow Engineers..... | 24 | O | S | Trackson Co..... | † |
| Ludlow-Saylor Wire Co..... | † | O'Brien Mchry. Co., The..... | 92 | Truscon Steel Co..... | † |
| Ludlow Valve Mfg. Co..... | 18 | Ohio Power Shovel Co..... | 120 | Truscon Steel Co. (Pressed Steel Division)..... | † |
| Lufkin Rule Co..... | † | O. K. Clutch & Machinery Co..... | † | Tucker & Laxton..... | 26 |
| Luitwiler Pumping Engine Co..... | † | Okonite Co..... | 8 | Turner, C. A. P..... | 24 |
| Lunkenstein Co..... | † | Old Dominion Box Co., Inc..... | † | | |
| Lupton's Sons Co., David..... | † | Ophuls & Hill..... | 24 | | |
| | | Osborne & Sexton Mchry. Co..... | 93 | | |
| M | | Owen Bucket Co., The..... | 95 | | |
| MacElwee & Crandall, Inc..... | 24 | Owensboro Sewer Pipe Co..... | 4 | | |
| Macon Concrete Roller Co..... | † | | | | |
| Mahon Co., R. C..... | † | | | | |
| Main, Chas. T..... | 24 | | | | |
| Manhattan Perf. Metal Co..... | | | | | |
| Manister Iron Works Co..... | 111 | P | | | |
| Marine Metal & Supply Co..... | 92-92 | Pacific Flush-Tank Co..... | * | | |
| Marr & Co..... | 85 | Page Fence Association..... | † | | |
| Maryland Metal Bldg. Co..... | † | Parsons Co., The..... | 99 | | |
| Maryland Trust Co..... | 85 | Patent Scaffolding Co..... | † | | |
| McClinic-Marshall Co..... | 14 | Patterson Co., W. W..... | 14 | | |
| McCrady Co., John..... | 24 | Peele Co., The..... | † | | |
| McCravy Co., J. B..... | 25 | Penn Mchry. Co., H. O..... | 94 | | |
| McEverlast, Inc..... | † | Pennsylvania Drilling Co..... | 27 | | |
| McLanahan and Stone Mch. Co..... | 22 | Perry, Buxton, Doane Co..... | 91 | | |
| Mecklenburg Iron Works..... | 115 | Phoenix Iron Co., The..... | 14 | | |
| Mees & Mees..... | 26 | Piatt, Wm. M..... | 24 | | |
| Meigs, Bassett & Slaughter..... | † | Picard Laboratories, The..... | 25 | | |
| Meromile Trust Co..... | † | Pidgeon-Thomas Iron Co..... | * | | |
| Merchant & Evans Co..... | † | Pipe Railing Constr. Co..... | 16 | | |
| Mero Nordstrom Valve Co..... | † | Pittsburgh Piping & Equip. Co..... | 4 | | |
| Milburn, Heister & Co..... | 21 | Pittsburgh Testing Laboratory..... | 26 | | |
| Miller & Asso., Wendell P..... | 24 | Platt Iron Works..... | 111 | | |
| Millner Co..... | 16 | Porter Co., H. K..... | † | | |
| Milwaukee Corrugating Co..... | 17 | Portland Cement Ass'n..... | † | | |
| Milwaukee Electric Crane & Hoist Corp..... | † | P. O. Box 1844..... | 91 | | |
| Missouri-Kansas-Texas Lines..... | † | Power Piping Co..... | 4 | | |
| Missouri Pacific Lines..... | † | Preacher & Co., Inc., G. Lloyd..... | 21 | | |
| Moccasin Bushing Co..... | 8 | Progressive Mfg. Co., The..... | † | | |
| Model Land Co. (Flagler System)..... | 27 | Proposal Advertisements..... | 88 to 90 | | |
| Moesch-Edwards Corrugating Co..... | † | Provident Savings Bank & Trust Co..... | 85 | | |
| Monighan Mfg. Corp..... | 32 | | | | |
| Moore Dry Kiln Co..... | † | | | | |
| Morgan Construction Co..... | † | | | | |
| Morris Machine Works..... | † | | | | |
| Morse Chain Co..... | † | | | | |
| Mott Core Drilling Co..... | 26 | | | | |
| Moyer Co., Tilghman..... | 25 | | | | |
| Mueller Co..... | † | | | | |
| Mullergren, Arthur L..... | 24 | | | | |
| Mundt & Sons, Chas..... | 22 | | | | |
| Mundy Hoisting Engine Co., J. S..... | 95 | | | | |
| Murphy's Hotel..... | † | | | | |
| Myers & Bro. Co., F. E..... | 111 | | | | |
| | | | | | |
| N | | | | | |
| Nashville Bridge Co..... | 14 | | | | |
| Nashville Hardwood Flooring Co..... | 105 | | | | |
| Nashville Industrial Corp..... | 92-93 | | | | |
| National Blow Pipe & Mfg. Co., Ltd..... | † | | | | |
| National Cast Iron Pipe Co..... | † | | | | |
| National Equipment Corp..... | 99 | | | | |
| National Paving Brick Mfrs. Assn..... | † | | | | |
| National Traffic Guard Co..... | † | | | | |
| National Tube Co..... | † | | | | |
| Newport News Shipbuilding & Dry Dock Co..... | † | | | | |
| Norfolk & Western Railway..... | † | | | | |
| Nortmann-Dufke Co..... | 22 | | | | |
| Northwest Engineering Co..... | 10-11 | | | | |
| Novo Engine Co..... | † | | | | |
| Nussbaum & Co., V. M..... | † | | | | |
| Nutting Truck Co..... | † | | | | |
| Nuveen & Co., John..... | 85 | | | | |
| | | | | | |
| Advt. marked † not in this issue. | | | | | |
| Advt. marked † appear in first issue of month. | | | | | |
| Advt. marked * appear every other week. | | | | | |
| | | | | | |
| Classified Opportunities | { | Pages 90-91 | Proposal Advertisements | { | Pages 88 to 90 |
| | | | | | |
| Resale Department | { | Pages 91 to 94 (2-30) | | | |

Eleven Billion Dollars

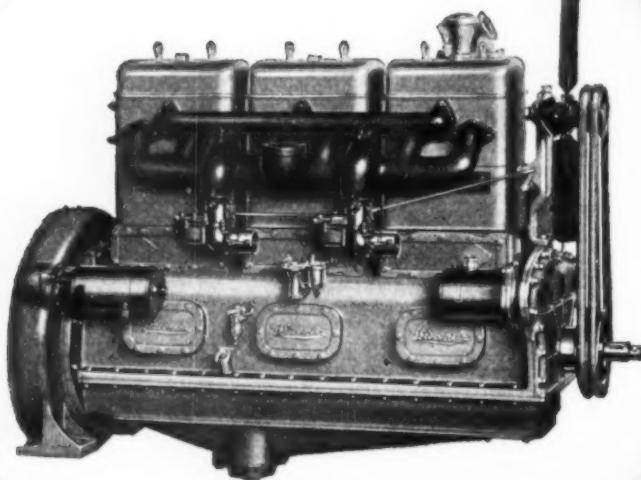
The country has announced a building and construction program that calls for the expenditure of an enormous amount of money. *Get your share.*

The program is getting under way and will continue to gain momentum from month to month. It is advisable to follow closely the reports in the Daily Construction Bulletin on all industrial, engineering and construction enterprises that are developing in the sixteen Southern States from Maryland to Texas.

DAILY CONSTRUCTION BULLETIN

Published every business day—300 issues a year
Subscription price, \$40.00 a year

Published by MANUFACTURERS RECORD, Baltimore, Md.



No Frills - No Fads

Rugged simplicity is the key-note of Wisconsin engine construction.

We believe that makers and users of heavy-duty power equipment are interested in more work for a given amount of cost, rather than in trick innovations that sound better than they work. Frills and fads mean extra tinkering, more frequent shutdowns, more difficult overhauls . . . Wisconsin overhead valve construction keeps engines operating consistently, at low cost, with little attention. Maintenance and adjustment are simple matters.

Accessible construction throughout makes all repair jobs comparatively easy. And back of all this, of course . . . ample power for the work that is to be done, at surprising economy.

Built in a full range of Sixes and Fours, from 20 to 150 h.p., for industrial machinery, trucks and tractors.

Wisconsin Motor Co.

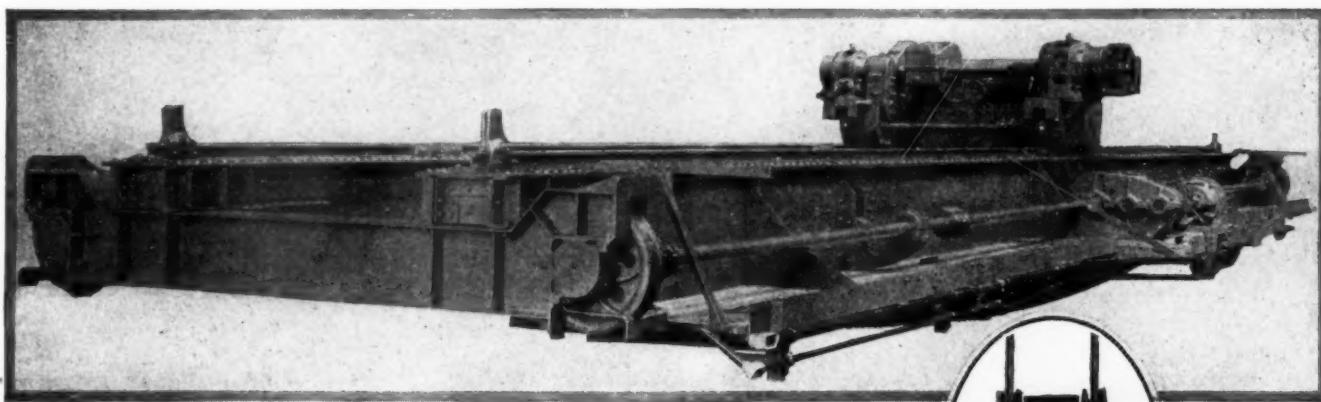
Milwaukee
Wisconsin

WISCONSIN ENGINES

MORE POWER
per
CUBIC
INCH

In engineering their crane for roller bearings, the Milwaukee Electric Crane and Hoist Corporation have given industry a crane able to meet the swift pace of modern production.

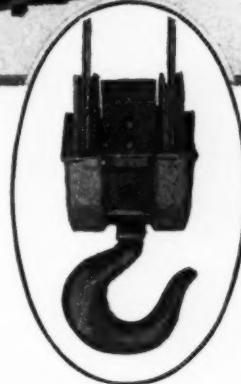
Hyatt Roller Bearings are used throughout—on the motors, the trolley, the bridge, and the bottom block.



With Hyatt Roller Bearings thus applied to cranes the resultant advantages are: Less starting effort under load—quicker acceleration—reduction of maintenance—saving of power.

In the same way Hyatt is serving Milwaukee, and other principal crane builders, Hyatt can serve you. If you have need for anti-friction bearings as part of the equipment you build, or the machinery which helps produce it—specify Hyatts and be sure.

HYATT ROLLER BEARING COMPANY
Newark Chicago Detroit Pittsburgh Oakland



MILWAUKEE
THE ROLLER BEARING
TRAVELING CRANE

HYATT
ROLLER BEARINGS
PRODUCT OF GENERAL MOTORS

**Every Bearing . . .
a Hyatt Roller
Bearing**

8 TONS IN ONE BITE



LIMA "101" owned
by Associated Rock
Company, Los Ange-
les, Calif.

Ability of a $1\frac{1}{4}$ yard shovel to dig up and handle a boulder weighing approximately 16000 lbs. requires a rugged dipper handle, a rugged boom, a single line hoist requiring no sheave blocks or dipper bail. An Independent Cable Crowd - friction free operation and tremendous power. LIMA "101" is the only shovel with all those advantages. Write for Bulletin No. 301.

The Ohio Power Shovel Co.

Division of Lima Locomotive Works Incorporated

Western Office: 848 Straus Bldg., Lima, Ohio
Chicago

Eastern Office: 2351 Graybar Bldg., New York



LIMA "101"

